

1. New Light on Greek Art*

2. Vitruvius and His Module

BY ERNEST FLAGG.

(1) New Light on Greek Art

THE only ancient work on architecture which has survived to our times was by Vitruvius, an obscure architect and mediocre writer of the first century A.D.

His avowed object in writing was to correct what he conceived to be the faults of Greek architecture by formulas evidently of his own making.

Mixed in with much that is either idle or false, his book contains a few passages of great value concerning certain Greek methods of design in common use when he wrote. From these we learn that it was the custom of the Greeks to use modules to obtain harmony of proportion in buildings.

In all living creatures the parts are proportional. Seeing this principle exemplified everywhere in nature, it was natural that man should have attempted to use it in his own work. It is not practicable to make all parts of all buildings proportional, but many may be invariable in their design as we see them in Greek Doric buildings.

These invariable parts, or some of them at least, were the key of the work, placed on the structure just as the musician places the signature on the written sheet of music.

Notwithstanding the fact that the formulas of Vitruvius do not agree with the ancient work, his unsupported word has generally been accepted as true during the last 500 years; so that to-day, in every civilised country, in every school of architecture, the teaching is based on his statements which can now be proved false. This has been disastrous for art. In large

measure, architecture has been degraded from the status of a fine art to the mere exercise of mathematical formulas. The outward forms of Greek architecture have been simulated, but the principles which produced those forms have not been used nor understood.

When a student at *l'Ecole des Beaux-Arts*, in Paris, in working on a *projet*, to save time and trouble I first drew in all the axial lines of the plan. They formed squares so nearly equal that I decided to make them equal and observe the result. To my satisfaction the design seemed improved, and the thought presented itself that perhaps in this way harmony of proportion might be obtained with certainty for which, otherwise, I should be blindly groping. Further experiments seemed to confirm the correctness of this theory and also revealed other unexpected benefits of importance. So convinced did I become of the advantages of this method, that I determined to use it in actual practice, and during 35 years, in work large and small, I have done so with satisfaction and profit.

When one uses a system of this sort, the mark of the module appears on the work. As the fixed unit pervades every part of the design, it is only natural to use it for the spacing of features of repetition such as consoles, triglyphs, etc.

A few years ago, when examining a restoration of certain Greek temples, the thought flashed on me that the triglyphs might be the mark of the module, placed there for the same reason which had so long prompted me to mark the module on my own work. Upon investigation, strong evidence was found of the correctness of this supposition. In many temples the outer faces of the lateral walls of the cella coincide with

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lines drawn through the plan from centre to centre of opposite triglyphs. These same walls often stop on such a line or else with pilasters centred on one. In some buildings I found a constant ratio between width of bay and height of column and similar points of likeness in other groups. I also noticed that practices which I had found most convenient in the use of modules were the very ones employed by the Greeks.

From my point of view the truth was clear, but others did not see it as I did. Being sure of my ground, I determined to find and present absolute proof; but how begin?

To prove the unit it would be necessary to prove the intended dimensions. To do that there must be something definite to work from, and how was it to be found where all was uncertainty and disagreement? Practically none of the findings of the principal investigators agree at a single point; many dimensions much to be desired are missing, and measurements of my own would be suspected of having been influenced by the theory. For a long time the task seemed hopeless, but finally progress began to be made.

In studying the temple of Diana Propylæa at Eleusis I discovered that according to Hittorff's figures the height of the top step is contained exactly 25 times in the height of the column and stylobate. It was also evident that other important dimensions were intended to agree with multiples of the unit. Similar conditions were found in the Doric portico at Athens and in other structures.

Even the temple of Rome and Augustus at Pola, a Roman building of a much later date and different order, conformed to the rule, and fifty times the height of the top step equals the height of the stylobate and order.

Here a strange condition was found. The building is composed of a pronaos and cella, together forming one façade on the flanks, yet each of these two parts has its own governing unit. The unit of the pronaos is represented by the top step and that of the cella by a continuation of the step in the form of the plinth, but slightly higher or thicker than the step. By ingenious adjustments, clearly apparent, the two units are made to work together and the various divisions of height in both parts agree with multiples of their proper units.

In the Parthenon the intended height of the order exactly equals 25 times the step unit. There is not time to multiply examples. I can only say that similar conditions are found in every one of the several ancient buildings I have had an opportunity to study since making the discovery.

In this way it was possible to be sure of various intended dimensions. Certainty was also had in other ways.

The stylobate top was intended to be in the proportion of 4 of breadth to 9 of length. This is certain

both because all measurements closely approximate that ratio and because the same ratio is found in stylobates of other temples, but what were the exact dimensions? The investigators all differ in their findings. Neither do any two agree as to the width of the bays from axis to axis of columns. Penrose gives 169".056 and Collignon 168".898.

Having observed that multiples of 13 abound throughout the work, it seemed possible that the building might be designed in that key. A test of this produced the most astonishing results. The unit 13 was found in every dimension of height which had been made certain of in the way above described. Also similar keys were found in other buildings.

Now it was seen that the width of the bay was 13^2 or 169", which lies between Penrose's and Collignon's measurements. Being sure of the bay it was easy to make sure of the dimensions of the stylobate top, because it must contain 16 times the bay one way by 7 the other way with equal margins to the edge of the step. It was immediately seen from the measurements that the margins were intended to equal the height of the capital or what may be called the capital unit, which is two times the square of 13 = 33".8, and that the intended length of the stylobate top was 2,737".8 and its intended breadth 1,216".8, figures which agree closely with the measurements and are to each other as 4 to 9. Let me say, by way of parenthesis, that the word "exactly" is here used in its literal sense.

It was also found that the capital unit is exactly contained in the length and breadth of the peristyle platform, in the height of the order and in the width of the bay. The intended width of the bay when multiplied by the number of bays at end and side gives two quantities which, of course, stand to each other in the proportion of 7 to 16, corresponding to the number of end and side bays. If to each of these quantities the intended height of the capital be added, two other quantities are produced which are to each other as 4 to 9, corresponding to the width and length of the stylobate platform.

The height of the triglyph, including base, when added to the height of the cornice exactly equals half the width of the bay, a condition found in other temples.

The height of the triglyph is contained exactly 10 times in the height of the building to top of cornice; 20 times in the width of the stylobate platform and 45 times in its length; 10 times the height of the triglyph shaft, including base, exactly equals the height of the order, and 10 times the height of the triglyph capital exactly equals the height of the stylobate.

The height of the top step is to the capital as 16 to 25, and the height of the capital is to the height of the triglyph as 10 to 18.

The sinkage at the joint between capital and shaft represents the 100th part of the height of the capital, and this same small unit is exactly contained in all minor and major divisions of the façade. The whole height of the building equals 2,600 of them.

The units prove that the small base below the steps was a part of the building intended to be seen, in part at least. It served the double purpose of showing that the steps were not for mortal use, but figurative, and gave scale to the building, which otherwise it lacks.

Many pages might be filled with interesting facts of this sort, but enough has been said to show how certainty was reached as to many intended dimensions.

The work of investigation is of the most absorbing interest, in which days pass as hours and weeks as days. Each new discovery makes the way easier and one becomes enraptured with delight and enthusiasm as these ancient fabrics slowly and as if reluctantly yield up their long guarded secrets and the true principles of Greek art are disclosed.

My figures have been tabulated. The measurements are not mine. All that I have done is to discover a number of the units and the meaning of several of the parts. My figures may easily be verified, and one who does so can hardly fail to be astonished at the close agreement of the work with the governing units. It conforms, indeed, with an accuracy unbelievable without proof.

The question now presents itself, what was the meaning of this marvellous accuracy? Such work was not done without an object.

There can be no doubt that the eye of the ancient architect was trained to harmony of dimensions just as the ear of the modern musician is trained to harmony of sounds. The numerous slight refinements to correct optical illusions show conclusively that this was so, for they would not have been made if the need for them had not been felt.

Everywhere in Greek work are found simple proportions, *i.e.*, proportions based on the lower digits as 1 to 1—1 to 2—2 to 3, etc. There are only 10 of these combinations between 5 on one side and 5 on the other, and only 26 between 5 on one side and 10 on the other. It is quite conceivable that the eye could be trained to observe these ratios, after correction had been made for optical illusions, such as found in the Parthenon. Even with us almost any architect of experience can tell with considerable certainty the number of diameters in the height of a column.

There is close analogy between architecture as a fine art and music; one relates to harmony of dimension and the other to harmony of sound. As each musical composition is written in a certain key, so each ancient building appears to have been designed in a certain key. The key of the Parthenon peristyle was 13, and every intended dimension, large or small,

so far as I have been able to discover, is a multiple of 13. The width of the bay is 13^2 ; the height of the capitals is 2 times 13^2 ; the length of the triglyph is 6^2 times 13^2 , and so it is with all the other intended dimensions. In like manner the Theseium was designed in the key of 7, and the temple of Diana Propylæa at Eleusis in the key of 17. Without knowledge of the key little can be known of the design, while with the key much of the work may be unravelled, so to speak, like a piece of knitting.

Since the destruction of the ancient learning, architecture has not been a fine art in the Greek sense, but at most the imitation of one. For 2,000 years it has been in the condition music or poetry might have been in if, ages ago, all knowledge of harmony and measure had been lost and not recovered. During five centuries we have been copying the outward forms produced in the practice of the ancient fine art architecture. Is it not possible for us now to practise the art itself and so create new forms more beautiful perhaps than those of the Greeks. We are of the same stuff as they, but they possessed certain simple principles, since lost, which produced great art. From their work we may recover a knowledge of those principles and apply them to our own benefit.

Vitruvius gives us two doctrines: one of Grecian origin and the other apparently of his own invention. These investigations prove the one true and the other false. His own doctrine relates to the lower diameter of the column as the module and to his various formulas for the design of the orders. The Greek doctrine was in effect as follows:—

To be well designed, a structure should have harmony as we see it in the human form, where there exists a symmetrical relationship of proportion between the members and the whole. That harmony may be had by the use of modules taken from the work itself to serve as terms of comparison for the various parts and the whole structure.

Since the Renaissance, architecture has followed the false doctrine of Vitruvius and the true doctrine of the Greeks has remained a dead letter.

The art of the Greeks was simple. It had for its object the extraction of the essence of beauty in nature. It was conventional. It did not simply copy nature, for that is useless. We see natural objects all about us in better form than they can be copied. Naturalism is vulgar. Art should go below the surface and reveal the spirit.

In man himself, and, indeed, in every living creature from the largest animal to the smallest insect, we see exemplified the correct principles of design. Nature is lavish in her instruction. In each living production harmony of proportion, unity, scale, symmetry and all the other essential qualities of correct design may be found. So that, to tabulate them, one has but to record

what there stands revealed. The object in the use of the principles of design should be the production and the preservation of beauty. If that is not the result, then they have been either misunderstood or wrongly applied.

There may be art in making things unpleasant to see, like many modern pictures, statues and buildings; but of what use is it? There is enough ugliness in the world without taking pains to produce more. In architecture, nine points of beauty depend on proportion, and good proportion may be had with certainty by the use of modules. In that way one may design, always using those simple combinations of dimensions which are sure to please.

In recent times, in all civilised countries there has appeared a restless tendency to break away from former methods, to abandon the meaningless copying of ancient forms and to walk independently. Such a change would be most commendable if made without sacrifice of beauty and refinement. Heretofore even the semblance of the ancient art has sufficed to stamp many of our productions with a certain cachet of elegance albeit but the outer shell or husk of the true art. Now even that is missing. Beauty and refinement seem no longer the fashion.

With us in America, much recent work has not even common sense to recommend it. The desire to hide or camouflage the steel frame has resulted in a veritable epidemic of falsifications. Many of our constructions are simply architectural scenery—falsehoods, in which neither the construction nor the design is what it

pretends to be. Here in France, much of the new work appears more German or Bolshevist than French. The exquisite taste which for so many centuries has characterised French productions and made of Paris the art centre of the world appears to be under a cloud. In many new buildings one sees in the ornamentation a strong leaning towards realism, much of it being simply the naturalistic reproduction of foliage—photographic and meaningless. On the other hand, in paintings, there is often a grotesque departure from nature, while in both beauty, the *raison d'être* of art, is missing.

The taste of the world must indeed be at the ebb, when such things are found here.

"If the salt hath lost its savour, wherewith shall it be salted?"

My hope is that these and further disclosures of Greek methods may awaken a new interest in classic art, and that this time it will not be the outward form which is copied, but those simple yet profound principles which enabled the ancients to carry taste to the highest point it has reached on earth.

Thus far little has been done, but that little may prove of great value. The documents which I have prepared prove conclusively the truth of the Greek doctrine transmitted to us by Vitruvius, and show, in some measure at least, how it was applied.

The door is now ajar and may be pushed wide open, admitting us to full knowledge of those methods of design which have proved most worthy of the genius of man.

(2) Vitruvius and His Module

FROM Vitruvius we learn that it was the custom of the ancients to use a module or fixed measure in architectural design, and existing remains of their work confirm the truth of this statement. The module was, as he says, selected from some part of the work itself and served as a gauge of proportion for all parts.

The easiest way to use such a system is to draw on paper ruled for the purpose with parallel lines at equal intervals in both directions, and assume that the spacing represents the module.

Vitruvius says: "A ground plan is made by the proper successive use of compasses and rule through which we get outlines for the plane surfaces of buildings." (Book I, Chapter 2.)

This seems to mean the alternate use of compasses and rule in making parallel lines in both directions upon which to trace the plan, and the work itself indicates clearly enough that this was indeed the way it was made. (See Figs. 1, 2 and 3.)

In Book I, Chapter 2, Vitruvius says: "The order-

ing (or disposition) of a building is the due proportioning of the parts to each other and to the whole and the obtaining of a symmetrical relationship between them. This is done by the use of a quantity called 'posotes' by the Greeks, being a module taken from a part of the building itself to serve as a term of comparison."*

Again, in Book III, Chapter 1, he says: "The disposition of an edifice consists in the proportions, which the architect should study with the greatest attention. That is to say, the ratio of dimensions which the Greeks called 'analogia'; this ratio is the symmetry between a certain part of the work and the whole, and it is this part which regulates the proportions. To be well ordered, an edifice must have

* *Ordinatio est modica membrorum operis commoditas separatim, universaeque proportionis ad symmetriam comparatio. Haec componitur ex quantitate quae Graece "posotes" dicitur. Quantitas autem est modulorum ex ipsius operis sumptio, e singulisque membrorum partibus universi operis conveniens effectus.*

symmetry and proportion, as it is found in the human form."*

In the above passages Vitruvius mentions no particular part for use as a module, but further on prescribes the diameter of the column for the Ionic

There is good reason to believe that this was not the common practice, but something new and unusual. Perhaps an innovation of his own, for it nowhere agrees with work before his time.

Where a unit is used in this way, the most obvious

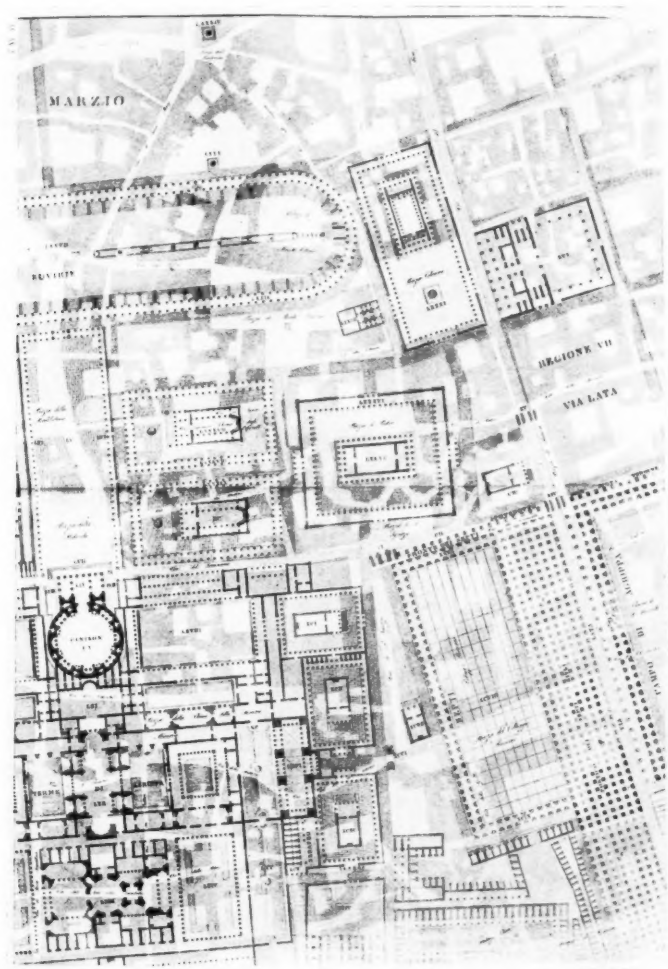


FIG. 1

order and half the diameter of the column or the width of the triglyph for the Doric order.

* Aedium compositio constat ex symmetria cujus rationem diligentissime architecti tenere debent. Ea autem paritur a proportione, quae Graece "analogia" dicitur. Proportio est ratae partis membrorum in omni opere totiusque commodulatio, ex qua ratio efficitur symmetriarum. Namque non potest aedis ulla sine symmetria atque proportione rationem habere compositionis, nisi uti ad hominis bene figurati similitudinem membrorum habuerit exactam rationem.

one to take, for the plan at least, is the distance from centre to centre of columns, or rather half that distance, so as to bring a governing line alternately on the axis of the solid and the void, which, in the Doric order, would coincide with the centres of the triglyphs. That this was indeed the common practice should be evident enough, one would think, from a glance at Figs. 1, 2 and 3, taken at random from Canina's map of Ancient Rome. It does not require much acumen to see that

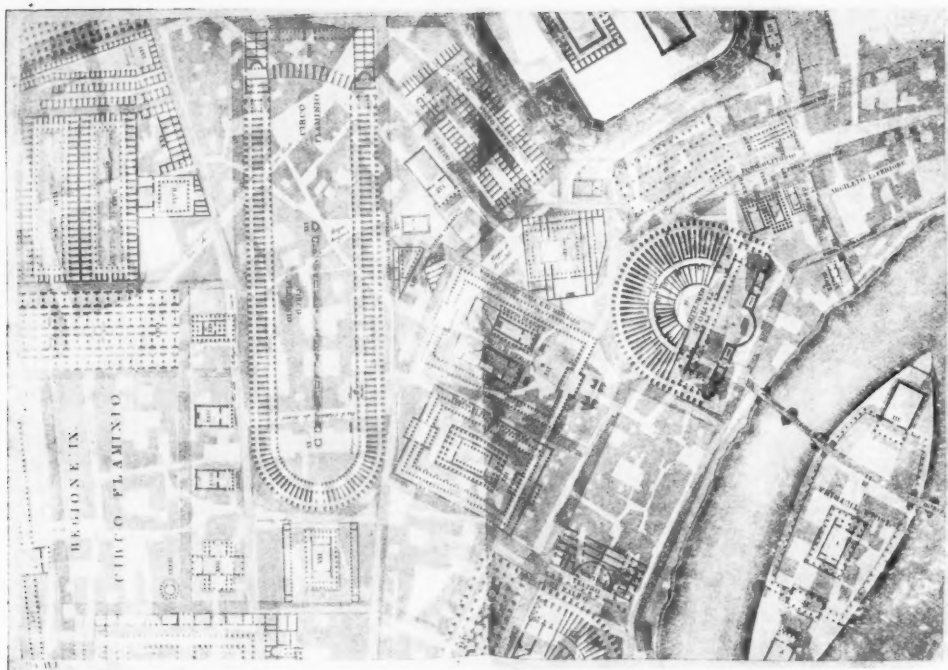


FIG. 3

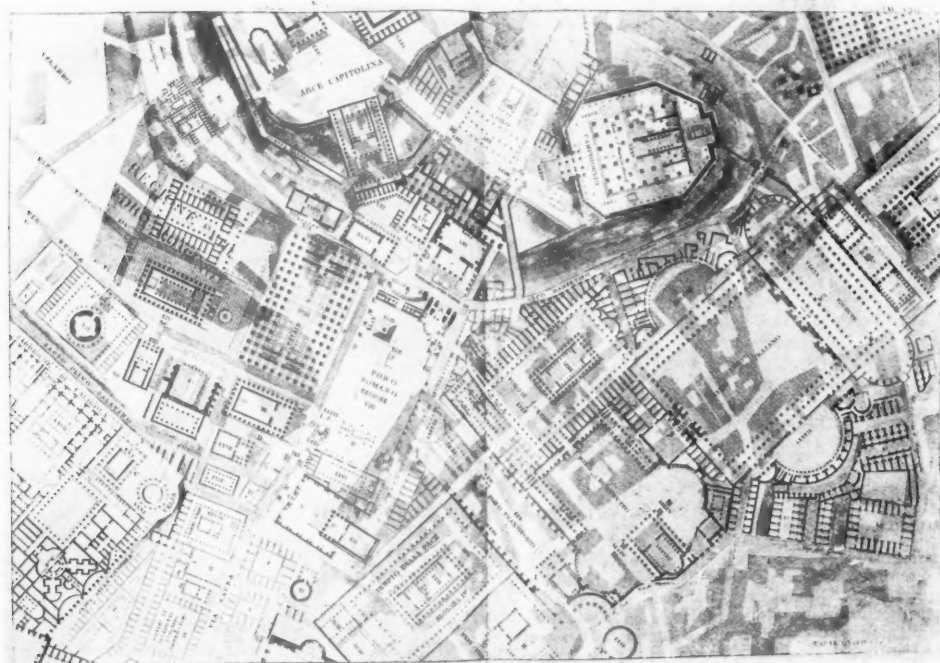


FIG. 2

these plans were made, in each case, by the use of some fixed measure or measures.

When Vitruvius began to write his book, it does not appear that he had any such module as the lower diameter of a column or the width of a triglyph in mind, for in Book I, Chapter 2, he says :—

"Moreover symmetry is the fitting accord of the members among themselves and of the parts with the whole, because of the uniformity of measure with reference to a certain part. As in the human body, where there is found a symmetrical harmony between the arm, foot, palm, finger and other small parts, so it is in perfected works. And especially in temples where symmetry may be calculated from the thickness of a column or the width of a triglyph, *or even from a module.*"*

As further on, in his third and fourth books, he takes the thickness of columns or the width of triglyphs as modules, this is equivalent to saying symmetry may be calculated from the thickness of a column or the width of a triglyph, *or even from the thickness of a column or the width of a triglyph.*

Evidently, when he wrote Book I, he was thinking of some other measure for use as a module than the one subsequently adopted. Notwithstanding his claim to be transmitting to others what he himself had been taught, it seems probable that this particular module was a thing of his own invention. The whole tone of his book accords well with such a supposition. He reveals himself as self-important and of a highly mathematical turn of mind. His object was to present a complete and "improved" compendium of architecture; and his pompous introductions to the various books into which his work is divided show how thoroughly well qualified he felt himself for the task. When he says, "Invention is the solving of intricate problems and the discovery of new principles by means of brilliancy and versatility," he evidently has himself in mind.

Guadet says of him : "Vitruve, écrivain à coup sûr médiocre, architecte probablement médiocre, si tant est qu'il fut architecte, avait laissé un livre très discuté, recueil plus ou moins approximatif des règles de l'architecture grecque ; très éloigné des origines de cet art, il fut aux créateurs de l'architecture ce que furent les rhéteurs aux grands orateurs, les sophistes aux grands philosophes. Mais comme écrivain antique d'architecture, il survivait seul, et la critique n'était pas encore née : le XVI^e siècle le crut sur parole, comme on croyait alors à tout ce qui s'était écrit en latin ; et

les auteurs de la Renaissance, Alberti, Vignole, Palladio, Philibert Delorme, tous grands artistes, le suivirent dans la voie de l'architecture chiffrée ; seulement le génie de la Renaissance resta libre malgré tout, et l'art fut supérieur à l'enseignement qu'il recevait."

Five hundred years had passed since the great Epoch of Greek art when Vitruvius wrote, but some of its traditions still lingered and his work is the only written link between them and us. It is therefore of inestimable value in spite of the incapacity and vanity of the author, who, while recording some of the Grecian doctrines has his own methods to exploit. It is important to discover which was which, and the key for so doing lies in existing remains of the ancient buildings themselves. They show the use of numerous units in their design, and so far at least substantiate the truth of what Vitruvius says of the common use of a module ; but they also show that the module he recommends was not the common one. Unfortunately, up to the present time, this truth has not been sufficiently realised nor the full significance of the module in Greek architecture understood. Instead of a simple way of obtaining harmony and preserving rhythm in architecture by measure, as in music and in poetry, we have been taught architecture chiffrée, as Guadet says.

Through the mediocre intellect of Vitruvius this great principle of Greek art has been seen as through a glass—darkly. Some glimmering of it there has been, but so confused in the presentation as to be worse than useless. Fortunately by the ancient buildings themselves his text may be sifted in the light of truth and the wheat separated from the chaff. Figures do not lie, as the saying is, and by them we may unravel the long tangled skein of Greek design and understand the true part which the module played in it. If this knowledge had been placed in the hands of the great men of the Renaissance, what might not they have accomplished and how profoundly would it have affected modern art !

If Vitruvius's work had never been discovered it is probable that our knowledge of the true principles of Greek art would have been far greater than it is now, for then we should have studied the ancient works open-mindedly and received our information at first hand from sources which cannot lie. As it is, we have accepted as true the statements of a man about whom nothing is known except what he says of himself, and what he does say is not of a nature to inspire either confidence or respect. On his own statement he stands self-condemned as knowing little of, and being out of sympathy with, Greek art. Between him and the architecture of Paestum and the Parthenon there was a gulf fixed too broad for him to see across. Yet he would "correct" its faults by the application of a rule of thumb of his own making. In Book IV,

* Item symmetria est ex ipsius operis membris conveniens consensus ex partibusque separatim ad universae figurae speciem ratae partis responsus. Uti in hominis corpore e cubito, pede, palmo, digito ceterisque particulis symmetros est eurythmiae qualitas, sic est in operum perfectionibus. Et primum in aedibus sacris aut e columnarum crassitudinibus aut triglypho aut etiam embate . . . invenitur symmetriarum ratiocinatio.

Chapter 3, he sets out to do this for the Doric order and displays his qualifications for the work thus:—

"Some of the ancient architects said that the Doric order ought not to be used for temples, because faults and incongruities were caused by the laws of its symmetry. This is not because it is disagreeable in appearance or lacking in dignity, but because the arrangement of the triglyphs and metopes (*lacunaria*) is an embarrassment and inconvenience to the work.

"For the triglyphs ought to be placed so as to correspond to the centres of the columns, and the metopes between the triglyphs ought to be as broad as they are high. But in violation of this rule, at the corners triglyphs are placed at the outside edges and not corresponding to the centre of the columns. Hence the metopes next to corner columns do not come out perfectly square, but are too broad by half the width of a triglyph. Those who would make the metopes all alike, make the outermost intercolumniations narrower by half the width of a triglyph. But the result is faulty, whether it is attained by broader metopes or narrower intercolumniations. For this reason, the ancients appear to have avoided the scheme of the Doric order in their temples.

"However, since our plan calls for it, we set it forth as we have received it from our teachers, so that if anybody cares to set to work with attention to these laws, he may find the proportions stated by which he can construct correct and faultless examples of temples in the Doric fashion."

He then proceeds to give mathematical formulæ:—"In these ways," he says, "all defects will be corrected, whether in metopes or intercolumniations or *lacunaria*, as all the arrangements have been made with uniformity."

That one who could write thus should ever have been accepted seriously as authority on the Doric order is astonishing. To try to apply his theory to Greek Doric buildings is to insult the designers of them.

For more than five hundred years this obscure writer has imposed his teachings on a credulous world. His word has been accepted in preference to the testimony of the buildings themselves. His module fits no work antedating his time, yet faith in it with most people remains unbroken; the fantastic theory of this mathematician is accepted in all seriousness and design of the orders reduced to a mere application of formulæ or rule of thumb. Every existing Greek building is a protest against such "art."

To one approaching the subject with an open mind it seems extraordinary that architects and archaeologists should persist in using the Vitruvian system in representing measurements of ancient work when the fact that it does not fit is so patent. Yet with many investigators the unsupported word of Vitruvius seems to outweigh the evidence of their own senses, and in

measuring ancient monuments his scale is applied though practically every dimension proves it wrong.

As an example of what is meant, take this drawing (Fig. 4). It is from Buhlman and is a fair sample of similar drawings which may be found almost by the square mile in works by architects and archaeologists concerning classic buildings. Here we have, instead of standard units, metric or otherwise, the Vitruvian module and parts. The diameter of the column only is given in centimetres and all others in the Vitruvian way; the module being one-half the diameter of the column and the part one-thirtieth of the module. Unless by some happy accident, none of these measurements conforms to the rules of proportion laid down by Vitruvius. Two modules equal the width of the column, because that is assumed, while beyond all is chaos and an aggravation to one who wants to know the dimensions in standard units.

In order to make this drawing, the work was, of course, carefully measured, then these measurements were laboriously translated into the Vitruvian modules and parts as noted in the drawing. Now to obtain the dimensions in comprehensible form the investigator must as laboriously again translate the figures given into standard units. This sort of thing has been going on for four hundred years and nothing gained by it but a vast amount of misdirected labour and indubitable proof that the lower diameter of the column was not the module used in designing the work, but simply a fantastic theory based on the unsupported word of this obscure writer of the first century.

The fame of Vitruvius is great and doubtless always will be so, but in the future its basis is likely to change, for his distinction will rest on the fact that he was the perpetrator of one of the most gigantic hoaxes ever launched in an unsuspecting world.

His procedure was simple, and plainly apparent when the truth is known. In each of the three orders of architecture there is a family resemblance between the various specimens. To establish a rule or formula for the design of an order, one has simply to take a normal example, measure it and tabulate the results. The formula thus made will not be likely to conform exactly to any other specimen, but because of the family resemblance it will often come near doing so. The rules laid down by Vitruvius have never been found to apply exactly in a single instance, to work antedating his time; doubtless because the particular specimen on which his proportions were based has not been found, but they do necessarily apply approximately in certain cases, and when that happens great is the joy of the investigators. This unfortunate habit of theirs is a great hindrance to anyone who is more interested in obtaining the true dimensions than in learning whether Vitruvius was, in certain instances, somewhere near right.

What Vitruvius did anyone with even a superficial knowledge of classic architecture could do; but, in the doing, almost anyone would make fewer mistakes.

He would not say, for example, that the ancients avoided the use of the Doric order in building temples, a statement which shows that Vitruvius had not travelled much, even in Italy, and that he had little or no knowledge of architecture beyond the vicinity of Rome.

Nor would he say that the width of the triglyph was half that of the column, that temples are twice as

thing which he could have pictured in his wildest dreams. For more than four hundred years his theories have dominated architecture, so that to-day, in every architectural school on earth, his false module is accepted as the standard in teaching the student.

Now after nearly 1800 years he stands condemned by the testimony of the very buildings the method of whose design he pretended to describe. Although his book has done inestimable harm, parts of it are, as we have said, of great value, for they transmit some knowledge of Greek methods which were common knowledge

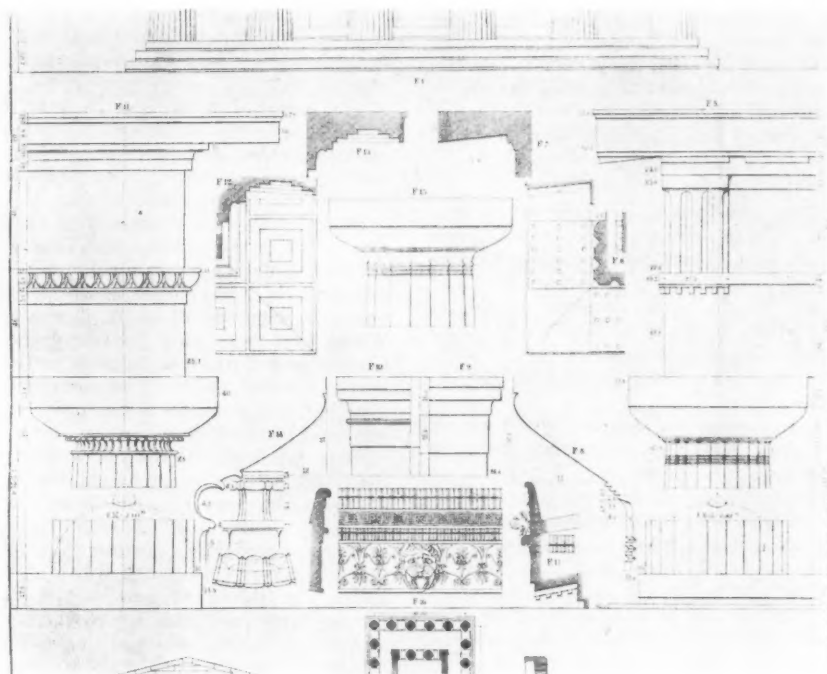


FIG. 4

long as they are wide, that triglyphs should be placed over the axes of corner columns, and many other absurdities.

His book is indeed a veritable tissue of mistakes. He seems to have been a sort of Jack-of-all-trades and had probably begun life as a clock maker, for he says the three parts of architecture are the building of buildings, the construction of machines and the making of clocks. That a man of his calibre should have been able to cast his baneful influence over architecture for more than four hundred years is one of the tragedies of history. By a mere chance his book alone, of all the ancient works on architecture, survived, and by this stroke of fortune he achieved fame beyond any-

at the time it was written. The trouble has been that along with these truths he has mixed theories of his own, and the false has been accepted with the true. Architecture, so far as he could do it, has been reduced from the status of a fine art, as it was with the Greeks, to a mere mathematical formula. The ancient rules have been lost because the manner of their application was falsified, or wrongly stated. Proportions upon which nine-tenths of beauty in architecture depended have been guessed at, and the guesses in most cases have been wrong. Rhythm and harmony, the dominant characteristics of Greek art, have been relegated to the background, and ugliness has become the common characteristic of most of the constructions of man.

The Renaissance as an Aristocratic Expression*

By W. E. VERNON CROMPTON [F.].

IN considering the method of approach to such a subject as this Paper deals with it is invariably found to be necessary to make some assumption which, although at first sight it may appear to be a truism passively accepted by most of us in our uncritical moments, yet upon examination is often found to be more questionable than it appeared.

I propose to start with such an assumption, namely, that civilisation expresses itself more characteristically through its art than through any other of its activities, and that of all forms of art, with the possible exception of the drama, the surest and most illuminating expression is that of architecture.

For that reason I will deal only with the architecture of the Renaissance as an aristocratic expression and leave it to others to consider it in other aspects.

As to the words aristocrat and aristocratic, I propose to adhere to their everyday use, which, when applied to government, means not necessarily government by the best but government by an exclusive section of society which, having acquired power by one means or another, is able to consolidate life in its own interest and to acquire a tradition and breeding not available for the mass of the people whose freedom is thus curtailed.

But before we proceed to discuss how such an exclusive governing body has expressed itself in architecture during the Renaissance, I venture to think it will be desirable to consider for a few moments some characteristics of the earlier medieval art.

The first of these characteristics is its *vernacular* nature. Art in medieval times was the everyday idiom through which the people at large expressed itself. There was no art of the upper classes as distinct from the lower; the art of the lord and the art of the peasant had the same natural and easy significance. It is distinctive of this medieval vernacular art that not only is its content an expression of the spirit of the times, but it attains form by means of a technique apparently so facile and inevitable that it was always understood by the people and came to them naturally as part of their everyday language.

Secondly, it was characteristic of medieval art that it was an expression of the emotions rather than the intellect—emotions kept in check and within severe limitations by the medieval Church, but having to do chiefly with the ultimate and simpler things of life—spontaneous, unsophisticated, and consequently common to all. It was an art open to everyone, yet it could not be taught as we understand teaching now—

days; in so far as you could feel you could learn, and the tradition provided the technique.

Thus to a very considerable extent medieval art was democratic in the sense that the poor man could realise himself therein equally with the rich man. There was not one art for the rich and one for the poor; medieval art was quite naturally an intuitive expression of society as a whole.

Having advanced so far, it is now pertinent to enquire how it came about that this vernacular and democratic art was displaced with such apparent ease.

The reason, I think, is to be found in the fact that medieval art—the expression of the medieval mind—was superseded because of the incompleteness of the medieval point of view. The medieval synthesis was unstable for two reasons.

Firstly, medieval thought was afraid of life as a whole, life in the fullness of all its aspects. Certain avenues of thought were forbidden as leading to perdition; there was consequently no joy in the untrammelled pursuit of knowledge as an end in itself. While there was a zeal for knowledge it was not for knowledge for its own sake, but only for the kind of knowledge that might be of use in attaining "salvation." Every intellectual pursuit in the Middle Ages was held in common subservience to this idea.

Thus the medieval attitude was a denial of all that the Greek understood by humanism. It was a scheme of thought for part of man and not for the whole. The medieval synthesis self-consciously and with intent set out to cover only a portion of our humanity, therefore of necessity contained within itself the germs of decay. In this I suggest that it differs from the Greco-Roman synthesis upon which the Renaissance was based, which, while setting out to embrace the whole of our humanity, only succeeded in doing so partially because it was ignorant and shortsighted, but being based upon a will to be all embracing it contained within itself the germs of development.

Again, the germs of the Renaissance were implicit throughout the medieval period, for we must remember that during the Middle Ages there existed an enormous mass of Greek and Latin theology, philosophy and science which only awaited discovery and mastery. It was the task of the Middle Ages to resume this heritage of knowledge, but in doing so it fed upon that which was eventually to destroy it.

The history of the Middle Ages is a history of the gradual permeation of the mind of man by this earlier wisdom which, while apprehended, was feared and which eventually blossomed into the Renaissance of

* A paper read before the Art Workers' Guild.

the humanist attitude of mind based upon a humanist scheme of values, which—as we shall see—was duly exploited by the aristocrat for his own purposes.

Intuition, which by nature is common, was gradually displaced by intellect, which by nature is exclusive. The form in which things were conceived became more and more a matter of fashion and moment, and patronage by the great arose.

I do not suggest that history presents itself so clearly cut as this. Patronage and scholarship existed under the earlier Roman Emperors and in medieval times; but, broadly speaking, the distinction holds that art previous to the birth of the Renaissance was inclusive and vernacular, growing naturally out of the life of the time; afterwards it was exclusive and aristocratic, imposed artificially upon the life of the time. The lyrical form into which intuitive feeling and even passion crystallised spontaneously and without effort in medieval vernacular art became, during the Renaissance, more and more a self-conscious and intellectual activity—a mystery that has to be acquired, and hence not purely æsthetic.

So civilisation in western Europe turned its face again towards the Mediterranean which was its cradle and school, and to symbolise this home-coming Petrarch was crowned with laurels in the Capitol at Rome and I suggest it was there that the first Fellow of the Society of Antiquaries was born.

In proceeding to consider how the various phases of the Renaissance might properly be regarded as an aristocratic expression, I propose to confine myself almost entirely to the French Renaissance, which shows in a more dictatorial and exclusive manner, although perhaps not more significantly than other phases of the Renaissance, the aristocratic influence. The Italian point of view, although more fastidious, was in essence the same as the French.

It is not without significance that Alberti—a man of noble family and of conspicuous gifts—chose the calling of architecture to which he devoted himself as a scholar and a gentleman, and architecture henceforward was to be mainly a matter of culture—intellectual and exclusive. Neither can we overlook the example set by the aristocratic patronage of the Medici at Florence. Cosmo de Medici was the patron of Michelozzo, Brunelleschi and Donatello, as well as of Masaccio and Fra Filippo Lippi.

Lorenzo de Medici—*il magnifico*—made a great collection of antiques and founded an academy in his gardens at Florence for the study of the antique; he supported and encouraged students, giving premiums for proficiency.

Leonardo da Vinci, Andrea Sansovino and Michael Angelo came from this academy, and Sandro Botticelli was Lorenzo's spoiled child. Undoubtedly the Italian aristocrat was also actuated by the desire to

impose a scale of values in art which is typical of the spirit of the Renaissance.

Let us then picture to ourselves the French Renaissance in its general aspect as a kind of back cloth which, in its gradual fall, covered more and more completely as time went on all trace of the medieval scene in front of which the French aristocrat developed the plot to suit his own whim.

How did it all come about?

The spread of "the new learning which runneth all the world nowadays," as was said, was to a great extent due to the early travellers, mostly wealthy and aristocratic, who formed a continual stream from Northern Europe to Italy, being impelled by the desire for intellectual companionship and by the longing to learn at first hand what was being thought and said in the world. Whoever had keen wits and an agile mind and imagination yearned for Italy. Even the great Erasmus felt the power of Italy and was tempted to remain in Rome for ever by reason of the company he found there. He gives us a glimpse of the Venetian printing house where he and Aldus worked together, Erasmus sitting writing regardless of the noise of printers, while Aldus breathlessly reads a proof, admiring every work. "We were so busy," says Erasmus, "we had scarce time to scratch our ears."

When these travellers returned they sought to impose the ideas they had acquired upon the native craftsmen. As each new generation of artists and craftsmen was born into a classic way of thinking, the classic tradition became more and more the confirmed and natural means of expression, not only among architects, painters and sculptors, but among the lesser craftsmen even in remote country districts.

This tradition was guided and perfected by the aristocrat to the end that he might express his aspirations, whims and ideas. Art became intensely objective and set great value upon the orderly appearance of things; it was fastidious to the last degree in the choice and adaptation of form.

To this end was the French Academy founded under Richelieu, and afterwards expanded under Colbert, who created the five Academies:

1. Inscriptions and Medals.
2. Science.
3. The French Academy at Rome.
4. The Academy of Architecture.
5. The Academy of Music.

These were the instruments by means of which the French aristocracy was able to educate the artists and craftsmen whom they patronised and employed to a pitch of technical excellence of which we have little conception to-day. Students of architecture were sent to Rome or elsewhere to study, exemption from many oppressive regulations was granted to artists who showed

themselves gifted, and free quarters were reserved for them in the Louvre.

Further, the commercial side as we understand it was not neglected. Manufactures were founded and revived, there were honours and State aid for those who laboured therein; thus artistic production was fostered, so that business production and æsthetic design should not exist and develop, as invariably they do to-day, in separate idea-tight compartments. "Colbert brought the influence of the State to bear on the manufacturers through the various trade guilds: for instance, if bad cloth were produced specimens were exposed with a ticket attached giving the name of the delinquent; if the fault were repeated, the master or workman at fault was censured by the guild; in the event of a third offence the offender was tied to a post with a specimen of the faulty product tied to him."

Thus an organisation was created and controlled for the purpose of bringing art into line with the other activities of an aristocratic civilisation. Admittedly this was a second-rate ideal under which artistic imagination was stereotyped and the integrity of individual artists was weakened; but even so the work of the French Renaissance shows an excellence which is our despair to-day, as may be seen from such typical examples as the chapel at Versailles—a building not so well known as it deserves to be. It illustrates more completely than any other I know the religious mentality, and as a consequence the real mentality, of the leaders of the French Renaissance. An examination of old engravings, such as that of the east end of this chapel by Rigaud, shows us not only a Gothic idea in Renaissance clothing, but also—petrified as it were—the spiritual ideals of the French aristocracy.

The same atmosphere prevails when we turn to domestic work and gardens of the period, considering them not as they appear to-day, but as they are presented to us in their engravings by Israel Silvestre, Perelle and Rigaud. The beautiful engraving by Silvestre of the Maison de Sceaux, which belonged to Colbert, is typical of the rest: it was from such houses as these whence proceeded the will that controlled the art of the time, chiefly in France but also in North-west Europe generally. The lay-out of the garden by Le Nôtre is particularly expressive of a dominating aristocracy; such gardens, of which there were many, proclaim that there is no question as to the ownership of the earth and the fullness thereof.

It must be admitted that the orderly sweep of the design at Sceaux is very fine, but for my purpose it is more valuable as indicating a point of view than as an artistic achievement. The artificial canal mounting towards the horizon is as menacing in its reach as is the extension of the slum under our modern and more enlightened civilisation. As a whole it proclaims domi-

nant ownership, self-conscious yet unperturbed, no matter at whose or what expense.

The old engravings of Monceaux, of the chateau and garden of Vaux le Vicomte, belonging to the notorious Fouquet of Chantilly and the Luxembourg, all strike the same exclusive note; even the beautiful and poetic Hermicycles at Nancy are in the same category, they all show the peculiar quality and mastery of design that was demanded by an aristocratic regime.

In connection with work such as this it is impossible to overlook the fact that a great period of art was produced to a very considerable extent by State organisation. The French Renaissance, which began as an affected æsthetic pose on the part of court dilettanti, became more and more a serious activity fostered and organised by the State. It is true that it was not a socialised activity run by and for the Commonwealth, but it was an activity run by the State most successfully for the benefit of an exclusive section of the community, and is a pertinent illustration of the fact forgotten or evaded to-day that the failure of a community to carry on its activities with success is not due to any inherent incapacity in a community—*qua* community—to carry on such activities, as from the fact that except in rare cases—such as we are now discussing—no community yet has learned how to organise its activities.

Le Petit Trianon, by Gabriel, is perhaps the most consummate expression in existence of an aristocratic regime: a characteristic masterpiece, intellectual, mature, devoid of sentiment, difficult in its very simplicity—the result of a steadiness of aim through many years. In this building the architecture of the age had achieved what was required of it. Aristocracy had at length found perfect expression.

With the decline of political aristocracy towards the end of the eighteenth century a parallel decadence took place in the arts, first felt, as was natural, in the minor arts, that is, in those arts that are probably least subject to aristocratic influence and imposition. This was simply a case of cause and effect.

As the aristocratic support became weaker, as its demands became less discriminating, so do we see a falling off in scholarly design and exacting craftsmanship. This decline is to be observed more definitely in this country where no Colbert had appeared to drill the artists by means of academies, and State aid and control into a reasonable condition of complacency. Also in this country, where the aristocratic influence was naturally weaker and less organised than in France, it was submerged more easily by a plutocracy which was for the most part baneful because it had neither scholarship nor tradition: with the result that the last 150 years has witnessed the gradual loss of the accepted language of art, form and technique—at any rate as regards architecture—which was only what one might expect from an art form mainly intellectual which

had been taught from above rather than being a spontaneous development from the emotions.

On the rise of plutocracy, bringing the new ignorance in its train, the artist found himself somewhat alone in the world, regarded as a man belonging to a hierarchy apart—one who practised a more or less forgotten mystery of no special importance.

But mankind cannot do without common art: the history of all nations shows this. As soon as the aristocratic incubus was raised men began to express themselves again in the old way, especially in this country. Vernacular art revived like the weeds in a neglected garden. The factory, the suburban villa, the railway station, and the like arose as the spontaneous expression of the emotions freed from the control of an aristocracy powerless at last to dominate the situation, but they were emotions enervated by the forced hot-house conditions of the aristocratic regime, and

without the support of a technique that was rapidly vanishing.

I do not wish, however, to claim too much; other influences were at work to undermine the art of the Renaissance, chief of which was the co-related industrial revolution.

The medieval synthesis failed because it would not look life in the face. The Renaissance synthesis failed—at any rate as regards architecture—because the aristocrat, in setting out to impress the new humanist values upon his age, made the philosophic mistake of confusing quantity with quality; in other words, he placed the old, transient humanistic forms upon an equality with the eternal humanist values, and vernacular art was smothered for something like 300 years. It must be with mixed feelings, however, that we realise that this fine yet baneful aristocratic influence is no more.

London City Churches*

BY SIR REGINALD BLOMFIELD, R.A.

As announced in *The Times* of 20 November, the Union of Benefices and Disposal of Churches (Metropolis) Measure, 1924, was passed on the 18th inst. by the Church Assembly by a very large majority. The Measure deals (1) with the redistribution of benefices, a matter with which the layman is not concerned, and (2) with the "pulling down or removal of any church," and "the sale or disposal of its site," with which all who care for our beautiful City churches are very much concerned.

The *modus operandi* for this latter purpose appears to be as follows: In the first place a Metropolitan Benefices Board is established consisting of 30 members, of whom 23 are appointed by ecclesiastical or quasi-ecclesiastical bodies and seven by lay bodies. In addition, if the church is wholly or partly within the City of London four members are to be appointed by the City Council and one by the L.C.C.. Reckoning these five additional members as laymen, this gives 12 lay to 23 clerical representatives. The Bishop, having marked down his church, gives not less than one month's notice either to the Ancient Monuments Board or the Royal Fine Art Commission—it is not clear which—and to the Benefices Board. The Ancient Monuments Board may advise the Benefices Board as to the value of the building in question, and the Benefices Board may, "if in its discretion it thinks fit," advise the Bishop in regard to the recommendations of the Ancient Monuments Board; or, on the other hand, it may put these recommendations into the waste-paper basket. After

this the Bishop appoints a Commission consisting of five members to inquire into and report on the scheme. If the Commission reports to the Bishop in favour of the scheme, the Bishop may require the Ecclesiastical Commissioners to frame a scheme in accordance with the report of the Commission. Notice has to be sent to various persons and bodies named in a schedule, who shall have not less than three months within which they can appeal to the Benefices Board. If the latter body approves the scheme, the Bishop calls on the Ecclesiastical Commissioners to certify the scheme and its approval by the Bishop to the Privy Council. A final right of appeal to the Privy Council within one month is allowed, but in the face of the powerful organisation of the Benefices Board, the Bishop, and the Ecclesiastical Commissioners it seems very improbable that an appeal would be successful. If, on the other hand, the Benefices Board does not approve the scheme, the scheme is dropped for the time, but after an interval of five years the Bishop can set the ball rolling again by appointing another Commission. The destruction of City churches, which so far has proceeded in a somewhat casual manner, will, if this Measure be passed, be regularised and a very dangerous principle formally recognised.

The Measure, which was first introduced after the report of the Phillimore Commission in 1919, has been severely criticised on the general grounds that the ecclesiastical authorities have no right to regard these churches as property to be dealt with at their own discretion, and that this assumption, pushed to its logical extreme, would place at their disposal West-

* A letter published in *The Times* on 21 November.

minster Abbey and St. Paul's Cathedral, and on the particular ground that the City churches are in many cases of first-rate artistic value and endeared by long historical associations.

A conference was held at the Royal Academy in 1920, attended by representatives of that body, the Society of Antiquaries, the Royal Institute of British Architects, the Society for the Protection of Ancient Buildings, the London Society, the National Trust, the City Churches Preservation Society, the Victoria and Albert Museum, and the Metropolitan Public Gardens Association, and a memorandum was forwarded to the Bishop of London recording an emphatic protest against the destruction of the churches scheduled by the Commission. The matter was taken up again in July last, and in order to arrive at a compromise, the conference suggested that a right of veto should be given to an independent body of expert lay opinion, either the Ancient Monuments Board or the Royal Fine Art Commission. This was refused. The conference then suggested that larger representation of expert lay opinion should be given on the Board, and that in all cases of appeal the persons or body appealing should have the right to call for a report on the building from the Ancient Monuments Board or the Royal Fine Art Commission. The only result of a protracted correspondence, conducted with the utmost courtesy by Lord Hugh Cecil, appears to be the permission to one or other of those two bodies to submit its opinion to the Benefices Board. The number of lay representatives, though slightly increased, remains a hopeless minority, and whereas in the draft of the Measure in 1923 the Commission appointed by the Bishop was to consist of six members, three of whom were to be laymen, in the Measure as now approved the Commission consists of five members, of whom one shall be a layman. The ecclesiastical grip on the situation seems to be tightening. Lord Hugh Cecil honestly described the amendments made by the Committee in charge of the Measure as "slight," whereas the Bishop of London was surprised

at his own moderation, and declared that he had "hardly left himself anything." The opinion of his critics is that if this Measure is passed a machinery will be provided which, in unwise or unscrupulous hands, might lead to disastrous results, and would mean that the life of no church would be safe, since their fate will pass into the hands of a body whose principal *raison d'être* is their demolition.

There may be cases of unimportant churches in which, in view of urgent public necessity, fair-minded men might feel themselves compelled to assent to demolition, but one can have no certainty that the men dealing with these matters will always be either fair-minded or aware of the value of the building in question. The Commission of 1919—of which Lord Phillimore was chairman—with the honourable exception of Lord Hugh Cecil, who declined to assent to the proposed destruction of churches and the sale of their sites, and of Mr. W. J. Collins—suggested the destruction of 19 churches, including such churches as St. Mary Woolnoth; St. Botolph, Aldgate; All Hallows, London Wall; St. Magnus, and St. Michael, Cornhill. St. Mary Woolnoth is considered by competent architectural opinion to be one of the finest buildings of its kind in London. The proposal for its destruction was carried by the casting vote of the chairman.

If the recommendations of Lord Phillimore's Commission were carried out only 30 of the parish churches surviving or rebuilt after the Great Fire would be left; and there is a widespread feeling that the safeguards provided in this Measure for the due consideration of a proposed demolition in all its bearings are quite inadequate. It is begging the question to say that the issue is between "respect for a beautiful building" and "a longing to save living souls." These buildings are a priceless legacy of the past which it is our duty to preserve for posterity. They should only be sacrificed after the fullest and most careful inquiry, and on the best advice obtainable as to their artistic and historical value. The Measure as it stands does not provide this.

Planning for Good Acoustics

DISCUSSION ON MR. HOPE BAGENAL'S PAPER (SEE JOURNAL 22 NOVEMBER, PAGES 29 TO 43)

(MR. HENRY M. FLETCHER, M.A. [F.], IN THE CHAIR)

MR. HOPE BAGENAL: I would like to make a remark about the pronunciation of the word "acoustics." I have looked, for some time, for an authoritative statement on whether it should be pronounced "acowstics" or "acoostics." And I find that Professor Rogers Smith, who laid a paper before the Institute in December, 1860, says that it should be pronounced "acowstics" in England, "acoostics" in Scotland. I regret I have got into the habit of saying "acoostics," but I think that statement of Professor Rogers Smith should be authoritative for us here. It is a matter still open, and I hope anyone who speaks will pronounce it as he likes.

Dr. R. E. STRADLING (Director of Building Research, Department of Scientific and Industrial Research), in proposing a vote of thanks to Mr. Bagenal, said: The work which Mr. Bagenal has mentioned in connection with the Department by which I am employed is very largely the outcome of the work of Mr. Bagenal himself. It was started, in the first place, through the keenness of a previous Director, to assist the Government of India, and Mr. Bagenal has assisted us very materially during the course of the experiments. We are indebted extremely to him for the work he has put in.

I have very little to say on Mr. Bagenal's Paper itself. It is not my special line, unfortunately, and I can only say how much I have enjoyed it personally, and express on your behalf our great thanks to him.

There is just one thing I thought you would care to know in regard to further work on acoustics in connection with the Building Research Board. Mr. Bagenal has already drawn attention to the work going on at the National Physical Laboratory, under Major Tucker, and also at Harlesden directly under Mr. Barnett. All this work has a certain bearing on the architectural acoustic problem, and the Department has now called together a Committee of those interested in this special work, to take charge of and to direct the work in connection with it. This has been very much encouraged by the visits of your Science Standing Committee, in laying before the Department an idea of the great value that such work could be to the architectural profession; and, personally, I appreciate very much indeed the assistance which your Science Standing Committee has given us in that direction.

There is one other point which you may be interested in, perhaps. You may have seen, in the Press, a note with regard to the League of Nations Conference Hall, and the offer made by the British Government to be responsible for the testing of the Hall in regard to its

acoustic properties. You will be interested to know that this is one of the first problems which will be placed before the new Committee on Acoustics.

I now beg to propose, formally, that the very best thanks of this meeting be given to Mr. Bagenal for his most interesting paper.

Dr. ALEX. WOOD, University Lecturer in Physics, Cambridge, in seconding the vote, said: I became interested in the problem of acoustics, as a physicist, in 1916, by reading Sabine's paper; and knowing the general fog on the subject of architectural acoustics which existed in this country, Sabine's results seemed to be among those which were too good to be true, all too simple. Some time afterwards, I got interested in a Red Cross hospital at Cambridge. A wounded sergeant of the R.A.M.C. came in, and I made the acquaintance of Mr. Bagenal. I found that he had just written a dissertation himself on this subject, and that he, too, was interested in Professor Sabine's work. We did a considerable amount of work together in the large amount of leisure which he had at that time. Mr. Bagenal, in the work he has done on this subject, has shown very considerable gifts and aptitude for the scientific study of the subject. He is not, of course, the first who has combined these qualities; Wren himself was a man who made very considerable contributions to the problems of pure physics. I feel that this problem is of such interest, not only to architects and physicists, but also to the general public, that the outlook of co-operation which has been sketched for us by the proposer of this vote of thanks is an extremely hopeful feature. I believe there are very few people who have contributed more to this development than has the lecturer to whom we have had the pleasure of listening this evening. I would like to second, with the very greatest pleasure, the vote of thanks to the lecturer for the admirable way in which he has presented the historical side of his subject.

Dr. J. W. MACKAIL: There is nothing I am competent to say on a matter of this sort, but I would like to say I have listened to the Paper with the utmost interest, and, I trust, with some intelligent appreciation. But beyond that I cannot go.

There are two quite incidental remarks I might make, if I may do so without encroaching on the time which can better be taken up with the speeches of experts. The first is, I stand clear for the pronunciation "acowstics." The second is that, as the reader of the paper is, of course, as well aware as I am, the balance of evidence is against the existence in the

purely Greek, as distinct from the Græco-Roman, theatre of that heightened platform rising 8 to 10 feet above the level of the orchestra floor, to which he alluded, and which no doubt presented in the later Græco-Roman theatre a great reinforcement of the resonating surface and resonating box behind it. But as far as the earlier Greek theatre is concerned, it seems more probable that its height above the orchestra floor was not more than three or four feet, and it was solid stone.

Mr. G. A. SUTHERLAND: As a Scotsman, and an unrepentant one, I prefer to speak of "acoustics," and in this I am supported by the New Oxford Dictionary, which gives both pronunciations, but puts "acoustics" first. It is true that the New Oxford Dictionary was edited by a Scotsman, and was published in Edinburgh, facts which, no doubt, would have been considered by Dr. Johnson deplorable, if not actually indecent. But, however that may be, I think it may be to some extent taken as a standard, and as it gives both pronunciations, we can go as we please in the matter.

I should like to add to what has been said by the mover and the seconder of the vote with regard to the contribution of Mr. Bagenal to the interest which has been forced on this subject recently. Largely owing to his stimulating enthusiasm, the work has been taken up by the Building Research Board, and architects and physicists have become interested in the problem. He has suggested that there is sufficient material now available for the use of architects if they will consult physicists. To that I assent, but I add this warning, which arises out of a remark that was made to me by an eminent architect with whom I had the privilege of working. He said: "Such and such a shape is a recognised architectural shape, and you ought to be able to tell me how to make a building of that shape good acoustically." I pointed out to him that the laws of acoustics are not made by physicists, and they are of older standing than even the oldest architectural types. It is the business of architects to design buildings in conformity with the laws of acoustics, and it is not for physicists to endeavour to alter the laws of Nature to conform to the ideas of architects. It would be impossible, for example, for a physicist to design a building which would enable Peers to be heard when their remarks are addressed to their beards rather than to the audience, and that must be borne in mind. There are certain limitations, but with that reservation I have no hesitation in acting as advertising agent of the work that has been done by Professor Sabine in America and by others in this country, and saying that there is material available, and I hope that architects will make use of it.

There is one particular service which the gentlemen who act as assessors in competitions might render in

this connection. I have mentioned it before, and I understand it will bear repeating. It is, that if those gentlemen who act as assessors in competitions would lay it down that any design submitted for an audience hall must conform to a simple acoustic specification, it would be a great advance. Then designs which are impossible acoustically would be refused from the outset. It is no good designing a building and then trying to make it good acoustically. It must be done from the beginning. I do not doubt that the architectural profession is capable of rising to the occasion and designing buildings which are beautiful to look at and will still fulfil the necessary conditions and satisfy the laws of acoustic design.

Mr. Bagenal referred to the desirability of making echoes reinforce the direct sound and reach the audience as soon as possible. This is important, not only to produce extra loudness, but also to produce extra distinctness, which is what is generally lacking in the modern audience hall. The most absorbent surface in any auditorium is the audience, and the sooner we can direct the sound to that surface the more speedily will it be absorbed and the less prolongation and consequent overlapping of syllables will there be.

Mr. H. L. PATERSON [F.]: I should like to add my word of thanks to the lecturer. Like other architects, I have had my troubles in connection with acoustics. I designed a Nonconformist church, and the walls were plastered. The hearing was bad, but after four or five years the difficulty disappeared, and it was attributed to the drying of the walls. It may have been due to the change of minister. I should like to ask the lecturer whether the change had anything to do with the drying of the plaster.

I think a good deal has to do with the pitch of the speaker's voice. In a church which I attend often, the only man who can be heard well is the Vicar himself. Strangers, though their voices are stronger, can hardly be understood at all.

Reference has been made to Continental buildings. Is anything due to the fact that Continental speakers usually raise the voice towards the end of a sentence, whereas in England it is customary to drop it?

Mr. Bagenal spoke of domes being bad. We are now in a room with a dome, and I do not think I have ever been in a building where I have heard more clearly than here.

Dr. G. W. C. KAYE (of the National Physical Laboratory): I feel privileged to be allowed to add my personal appreciation of Mr. Bagenal's lecture.

In council rooms and meeting halls, the desire generally is to build a stately and dignified room, and it is difficult to get a dignified room which is of small dimensions. As a result, you inevitably get reverberation, unless remedies are adopted to the contrary. Incidentally the reverberation of the Gothic

church is to my mind not an unmixed evil. I have listened to sermons when I have reflected that this question of defective acoustics is one which should not be tampered with lightly!

The question of the work of the National Physical Laboratory has been referred to. The Laboratory has dealt with many phases of industry, and within the last year or two it has been decided to open an acoustics department. We have got the staff, and it is our intention, with the support of the Institute, to throw ourselves with the utmost vigour into this work, so that British architecture shall, as far as we can help it, be able to hold its own acoustically with any architecture in the world. Already in our short period of existence the questions of reverberation, of sound photography by direct means and by the ripple tank, have been attacked. We have got a Watson room for testing and measuring reflection and absorption of sound, and we are at work on various kinds of sonometers for measuring pitch intensity and quality.

Mr. MAURICE E. WEBB [F.]: I am not a scientist, but I would say a word as a practical architect who has recently had some experience of Mr. Bagenal's experiments. We have been building a few class-rooms, and, at Mr. Bagenal's suggestion, we covered these class-room ceilings with canvas instead of plaster, and put the Cabot quilting on the top of it. We tested the class-room before it was covered with the quilting, and the period of reverberation was four seconds, which means, according to the American theorists, that if a boy scrapes his foot on the floor, the reverberation of the noise thus made goes backwards and forwards from the floor to the ceiling 183 times before it stops. That is an absolutely impossible state of affairs for a master lecturing to a large number of boys. The result of using this Cabot quilting was that the reverberation was reduced from four seconds to one second; and every master who goes into the class-rooms is astounded at the effect. When you go out of the corridors, which are full of noise, you enter these quiet rooms where there is no echo. Mr. Bagenal has all the credit of that. It was his suggestion, a simple, easy way of dealing with a small room with many people in it.

In great buildings and cathedrals, I think wireless and the amplifier will solve our acoustic troubles. Liverpool Cathedral people do not bother whether or not anybody can be heard from the pulpit: they have huge amplifiers hung from the ceiling, designed by Sir Gilbert Scott. A lot of troubles connected with big buildings such as the House of Commons and the House of Lords will, I think, be solved by wireless and the amplifier. We architects can do much in a lecture room like this. I think Mr. Keen has covered it with Cabot quilting. This is an easy room to hear in, and I think Mr. Bagenal's researches have resulted

in making it possible for every architect to render small rooms good for sound. You do not expect a lot of echo in a small room, but you expect to be able to speak comfortably without raising your voice. In the case of a cathedral or a large council chamber, where people are bobbing up in their places every minute, you must introduce an entirely new note: you must, I think, use wireless amplifiers and electricity. I shall be glad to hear what Mr. Bagenal has to say about that.

Dr. RAYMOND UNWIN [F.]: In the present Assembly Hall of the League of Nations they use an amplifier. That is a problem we may have to consider in connection with acoustics. I was astonished to find that, when seated in the gallery of that hall, I had difficulty in knowing whether I was hearing direct from the speaker, or from the amplifier. I could only tell at times when certain particular notes came more harshly from the amplifier.

Mr. J. S. WILSON: There is another matter which presents possibilities. At a recent lecture Sir Walford Davies mentioned that at a large church where the organ was considerably out of tune he played a chord which, if the notes had been in tune, would have sounded very nice; but which resulted in a bad discord. When the echoed sound came back, however, there were no discords; the reverberations or reflections had cut out the disagreeable part or the imperfections of the chord, and it sounded right. That suggests that by the manipulation of surfaces in rooms, you might make up for imperfections of speech.

Major W. S. TUCKER [R.E. Signals Experiment Station, Woolwich]: There is one point I should like to make on Mr. Bagenal's classical allusion to the Echo. I would like to remark that, however much one appreciates echoes, one cannot regard an echo as being a true reproducer of the original note under any circumstances such as we meet with in everyday experience. There are no rooms built that will echo the same type of sound as that of the source. And the diagrams which Mr. Bagenal showed us, which are very instructive and give an approximate idea of the distribution of sound, do not give an accurate representation of what takes place, because the size of the mirrors and the length of the sound waves combine to give a return which is not exactly of the same quality as that which is put out. Although, therefore, you may use an echo and may improve the sound qualities of a room by the use of an echo (because echoes may improve on the original sound), yet it is not the same as the original; and that fact is sometimes overlooked. We have heard reference to the wireless reproduction of sound, the pseudo-echo as it were, and I feel that so long as the loud speaker, which is part of our reproducing apparatus, is so intolerable and imperfect to the musical ear, we shall suffer to some extent by surrounding our halls by loud

speakers and by using wireless reproduction. It may be all right for following a speech and hearing what is said, but if the loud speaker is used to reproduce music, you will suffer in the quality of the music.

The point Mr. Bagenal made clearly is, that in order to get a really good sound distribution in a room you should have your speaker supplied with near mirrors, near reflecting surfaces, and the immediate environment should be of good reflecting quality. I think, also, a great deal is to be gained by making the rear and more distant walls and ceilings of the building as absorbent as possible.

I do not want to speak so much from the point of view of the audience as from the point of view of the speaker. We talk a lot about improving the room for the audience, and I think it would be well if we gave a little more attention to the speaker. There are some rooms in which it is easy to speak, and there are others in which it is difficult to speak. We can help the speaker a good deal if we can place resonators near him which will have the property of double resonance and so reduce the effort required in the production of sound. In the Greek theatre there were wooden panels, and if instead of those—for wood is a poor resonator—you could unobtrusively place rectangular boxes of different sizes, then the speaker would find that it was much easier to produce his sounds than if he had nothing but bare walls and floor near him. We can go further, making use of our knowledge of the properties of resonators. We might employ a family of trumpets, again unobtrusively placed and near the speaker. These would enable him to produce his voice much more clearly and with much greater ease than if he were provided with no resonating material.

You will notice that I am just saying now, in other words, what Mr. Bagenal said when he showed us the photographs of audience chambers where there were places for resonators and boxes. I do not consider that the use of the box as a resonator is a bad thing, or useless, but I think it is in the wrong place. I think it should be near the speaker, not away from him.

There are some rooms in which it is exceedingly difficult to speak. I should think the British Broadcasting room is a very tiring place to speak in, because of the absolute absorption of the sound by the material; but you are near your microphone, which is your audience, and therefore the effort to speak is small and the enunciation is clear. In the Hall of the Royal Society of Arts you have a lecture room which is pleasant and easy to speak in; and that is due to the fact that it is surrounded by great canvases which respond easily to the low-frequency sound which the voice produces. In that way, speaking there is made easy. The Royal Institution lecture theatre is notably free from reverberation, and it owes its good qualities not only to the tremendous sound-lagging of the up-

holstery, but it also has the quality of great quiet, being protected from the sounds of traffic outside, etc. It has been said that members of the audience at the Royal Institution, finding this restful atmosphere, compose themselves for a peaceful time during the hour's lecture. But it is a place which would ultimately be tiring to speak in, and tiring to listen in, though the reproduction of enunciation is very good.

There is another point. Mr. Bagenal has dealt to-night with the question of the audience-chamber of the theatre, of the church, and of the Houses of Parliament; but there is one rather humbler chamber which I would like to refer to, and that is the ordinary City office. I do not suppose that the average City man, or one who occupies an office near a crowded thoroughfare, realises how much he suffers from the great disturbance caused by the noise outside. There is a perpetual conflict between the claims of ventilation and the claims of quietude. The windows must be open, and therefore the office must be in some way lagged, so that the great volume of sound from outside may be, as far as possible, absorbed. You are familiar with the comfort of sitting in a first-class railway compartment, which is heavily upholstered; there the sound from outside coming through the open window is absorbed as quickly as it comes in. Compare that with the discomfort of talking in a third-class compartment which is only slightly upholstered. We cannot upholster the office, but recently Mr. Barnett, acting on the principle of Sabine, has produced plasters which we have had the privilege of testing. And we find that the 20 per cent. referred to by Mr. Bagenal for Sabine plasters has been exceeded, and some of our most recent specimens have got as far as 40 per cent. absorption, which is a very remarkable absorption in anything which has a good surface for the material. I think there is a great future for a plaster like that in ordinary buildings and ordinary offices, as well as in the big and more palatial places which have been referred to to-night.

Mr. P. W. BARNETT (of the Building Research Board): This is, of course, not the first information on acoustics we have to thank Mr. Bagenal for. I would go as far as to say that, thanks largely to the lecturer and Mr. Sutherland, the problem of acoustics is now one of the simplest problems with which architects are confronted.

Mr. Bagenal has mentioned the experiments at Harlesden. Although the results obtained may be of some value, I think the chief value of this work lies in the experience it has given us of the Sabine theory in England. This will be of great assistance in the future work. He has named materials which proved to be highly absorbent, but, after all, those are only the most absorbent of the materials we have tested, and I can think of several new promising materials

which have not so many objectionable characteristics. I need only mention Balsa Wool, a timber product, and Gasbéton, a new Continental material, very porous and strong concrete, which I think will prove superior in every way to breeze concrete.

I join my thanks with those of my Director to Mr. Bagenal, for his enthusiastic help in the Harlesden experiments.

The CHAIRMAN (Mr. H. M. Fletcher) : We have had a very interesting discussion on a subject which is, I think, new to most people in this Institute. It has been gratifying to us to hear Dr. Stradling's testimony to the work of the Science Standing Committee, and it has also been pleasant to hear the testimony that all the specialist speakers have borne to the work which Mr. Bagenal himself is doing on this subject. One of the best indications of that work is this room, in which Mr. Keen was assisted with regard to its acoustic qualities by Mr. Bagenal, and I think you will agree that the result is excellent. It has occurred to me, that if Mr. Bagenal would turn his attention to the adjoining room, which is used as a Council room, the Institute might benefit very greatly. I can assure you that the amount of wisdom that is there lost to the world, by becoming a confused booming noise, is appalling to think of! I have no doubt Mr. Bagenal could do something to correct the defects of that room.

I was much interested in his references to the Greek theatre at Epidauros, because nearly thirty years ago I was in it, and the acoustic properties of it are extraordinary. What they were when the theatre was in actual use we can hardly imagine. I suppose the clearness, the dryness and the thinness of the Greek air has something to do with it. I do not know whether the subject has been investigated, but there is an extraordinary difference in quality between the air of Greece and that of England, and it would be interesting if the air of an experiment room were filled with vapour and then dried. But we tested the theatre at Epidauros by going on to the stage and speaking, while members of the party were placed in various points at the farthest portions of the auditorium. I do not remember the exact distance; the farthest seats no longer exist, but it was over 100 feet from the stage, and the stage has no backing to it, the old Greek stage having perished. Any ordinary conversational tone could be heard perfectly. The actual author who was used for the reading, because we all knew his work and remembered it, was Edward Lear, and the special passage which was read was "The Owl and the Pussy Cat," which is very good for testing, because it is full of vowels and there are but few consonants. Not only could you hear it when delivered in a conversational tone, but also when spoken in a slow, distinct whisper, all over the theatre. But, of course,

whenever we go back to the Greeks we find that they have done the thing better than anybody else.

I now put the vote of thanks to the meeting, which I am sure you will all support.

Carried by acclamation.

Mr. BAGENAL (in reply) : I thank you very much for your appreciation. Several very important points have been raised, which I would like to spend a few moments in answering, or commenting upon.

Dr. Stradling, in a very nice speech, made one point which I think is the most important that has been raised this evening: that is, the need for real co-operation between the Building Research Board and the Royal Institute, necessarily through the Science Standing Committee. To-night we have had the pleasure of meeting members of the Building Research Board here, and I think both we ourselves and they will be glad of this co-operation. We will mutually benefit by it; and we should take not only acoustics, but all the great scientific subjects with which, as architects, we are directly in contact, and meet the experts, the physicists and the chemists in the same way.

Next is the question of archaeology, and the information which Dr. Mackail was able to give me, which is very important and very interesting. I would say that it is often exceedingly difficult to get the sort of facts which Dr. Mackail mentioned, from works on archaeology. I think I was right in saying that the logeion of the theatres at Epidauros and Priene was 10 or 12 feet high? (Dr. Mackail: Yes; it is a question of the date of the existing stage.)

The next matter was Mr. Sutherland's speech. The point about scientific designing I will answer at the end.

A speaker mentioned drying out of plaster, which is an important point. I cannot give definite information upon it. It is one of the points on which direct experiment and acoustic research will be able to give the answer soon. The same speaker mentioned the question of dropping the voice in the last word of a sentence here, while in other countries this last word is stressed. That whole question of speaking properly is, of course, a problem by itself. I have frequently come across the difficulties raised by an imperfect use of the powers of speech that God has given us. A proper enunciation can get over at least 50 per cent. of the difficulties in acoustics; but people must remember that the unit of sound in speech is not the word, but the syllable. If you want to speak slowly, it is not your words, but your syllables which must be slow.

The same speaker mentioned the problem of the dome, and drew attention to this dome. This dome was considered very carefully by Mr. Keen, and he asked me to analyse it and report upon it from his designs. I worked out the reflected paths from it, and since none of them gave any considerable long reflection or echo, I left it entirely to Mr. Keen to decide whether

he would have the dome, or not. There was no danger connected with it. The problem in domes and in barrel vaults is when you get above a certain dimension.

Mr. Webb brought out the importance of ceilings for school rooms. It is most important that when we use, as architects, these patent plasters, and patent floors for cleanliness, as it is necessary that we should in many cases, we should remember that the effect of doing it is to produce reverberation. In the ordinary way a room the size of a class-room could be improved by having a carpet on the floor. If you do not put it on the floor, you must put it on the ceiling, and it is more efficient there, because the rays of sound strike the ceiling at a wider angle than they strike the floor.

Mr. Maurice Webb also referred to amplifiers, which I had not mentioned. I have an open mind about amplifiers. Amplifiers are going to be specially tested at Westminster Abbey next month. The point to remember about amplifiers is that they will increase loudness, but they will not make for distinctness; that is to say, you will not get round your reverberation problem by increasing loudness; in fact, you thereby make your reverberation problem more acute. If, therefore, amplifiers are used in a church or in a room, it is not good to have a few loud speakers; what you want is a number of little whispering voices along the pews, so that the voice of the preacher will be whispered low into your ear. If you put your speaker's voice all over the surface of the floor, speaking low, you would be able to hear perfectly. That is the method, in my opinion, in which amplifying within doors should be developed. Out of doors, where there is no reverberation, you can have as loud a speaker as you like; but indoors, if you have a loud speaker you only increase the reverberation.

Dr. Raymond Unwin, in what he said about hearing in the League of Nations Hall, drew attention to a difficulty. To make a room a good instrument for sound, you want comfort, you do not want unpleasant vibrations or an unpleasant tone, even if you can hear properly. Amplifiers should give some humanity of tone or they will not become popular.

Major Tucker opened the problem of selective absorption, which is a most interesting and most difficult problem, and one which I have not touched upon. It is perfectly true that tones are modified when they are reflected. Any organ builder will tell you that, and will give you much interesting observations upon it. Every organ installed must be a special organ, specially designed for the room or the hall in which it is to be placed. The reason for that is, that all reflecting surfaces absorb selectively, and therefore alter overtones and change the whole quality of the sound. But, there again, selective absorption is a whole field that requires research, and one that Dr. Stradling, Dr. Kaye and Major Tucker have before them.

The question of office noises is also most important. We, as architects, I think, should remember when we are building in London, that site values, as far as acoustics are concerned, are continually changing; buildings that to-day are perhaps silent may, by diversion of traffic, become very noisy, and we have got to keep noises out by means of really good rigid windows. And, as Major Tucker pointed out, the ventilation problem has got to go with the acoustic problem, because it is of no use closing your windows, making them of $\frac{1}{4}$ -in. plate glass and in rigid iron frames to exclude sound, and putting underneath them an air intake, because the sound will come through that air intake. The exclusion of sound must be, I think, very largely a problem of planning. We have got to plan our chambers and board-rooms and committee rooms on internal courts if possible, or with top lights. Acoustic difficulties could often be got round in that way.

Mr. Sutherland referred to the question of designing scientifically. I feel, as an architect, not as a specialist, that I owe an apology to you for increasing the complexity of modern planning. We have already so many factors to resolve that it is a terrible thing to add yet another. But I believe, and I think a great many of us believe, that all scientific material must be used by architects, and that all scientific material can be used for an end that is ultimately artistic. I thank you for listening to me, I think rather in that spirit.

The Society for the Protection of Ancient Buildings

FORTY-SEVENTH ANNUAL REPORT.

BY F. R. HIORNS [F.].

WE are reminded by this Report that the Society for the Protection of Ancient Buildings is now approaching a half-century of existence. At the present time, when both architects and the general public have more sound ideas on the correct treatment of old buildings, it is difficult to realise conditions that, in the mid-Victorian era, led to the formation of the Society. Forty years before that event, for example, A. W. Pugin was placing on record enormities that, it seems, were then commonly perpetrated in parish churches wherever a town or district happened to be rich enough to bear the expense. He speaks somewhat bitterly of "each ignorant shopkeeper as he attained the office of warden enriching his pockets at the expense of the ancient fabrics"; of how, in the process, carved and painted timbers of roofs with their massive coverings of lead were removed and flat-pitched slated roofs substituted; galleries being needlessly and unsuitably introduced; painters employed to marble and grain oak work; that often the latter, in the form of splendid pews, pulpits and panelling, was pulled away and replaced by characterless substitutes; that the old stained glass windows were replaced by "neat and uniform lights" of the period; old pavement by new, and so on—while, to complete the transformation, smiths were brought in to line the walls with stove piping and to set up a host of cast-iron furnaces. In such manner, combined with many structural changes, and the grafting of much new work on old, were our mediæval and other churches "restored" under what seemed the settled and determined policy of the period. In fact, poverty alone secured preservation of such works in the form, and with the original finishings, in which they had been handed down. We are, accordingly, not surprised to find the *Church Builder* for the year 1875 recording with satisfaction that Wren's Church of St. Michael's, Cornhill, had, under the charge of a distinguished architect, been entirely restored (the cloister being rebuilt), and its interior so embellished that it had become "without exception one of the most imposing churches of the City of London as regards interior decoration"; and, incidentally, it may be added, had ceased to be recognisable as a church of the Wren period. What happened to ecclesiastical structures was repeated in modified ways in the case of ancient civic and domestic buildings, which—as even happens to-day in a lessened degree—were sometimes entirely destroyed.

Associated with this brief looking-back upon the scant respect paid to old buildings a half-century

and more ago, it seems fair to assume that the present generally improved outlook in such matters is largely due to the work and influence of the Society whose latest Annual Report is now before us. Its aim is still, as William Morris, its founder and first secretary, stated it to be, "to turn public attention to the intrinsic value of our ancient buildings and the grievous loss incurred by their destruction, and to teach how much that value, both artistic and historical, depends on their being preserved in a genuine condition." It is in accord with such a belief that the work of the Society has developed and continued in two main directions—seeking to preserve whatever was of value in the building art of the past, and, as a natural consequence, advocating, and showing the way to bring about the minimum of change in the original work when conservation became a necessity. The consistent and sympathetic pursuit by the Society of its purpose has, one feels, met with no small measure of success and earned the gratitude of those who regard buildings as the most valuable among the visible records of our history, and vital evidence—in most cases—of excellence in craft processes. The Society may well, therefore, be regarded in the light of a useful ally of the Royal Institute.

It appears from the Report that the buildings with which the Society deals are still largely ecclesiastical, though the scope of its activities seems wide enough to cover every type of structure of, say, more than a century old—from a fragment of Roman walling to a Georgian cottage, or a rural barn to a cathedral. It would appear, too, that no appeal for guidance or advice is made to the Society in vain on the part of owners, members of the public, or, indeed, architects in respect of cases in which they may be interested. Of these over 300 are referred to in the Report as having been considered last year—including, among the more important, the London City churches, the sixteenth century Courthouse at Barking (now, alas, no more), and several bridges imperilled by recent transport activities. And it is pleasant to notice that the Society's advice is being increasingly sought and acted upon by public bodies, official departments and private persons. We seem, indeed—despite much that still occurs that is regrettable—to be getting nearer the point of view of John Ruskin (one of the Society's original committee), when he delivered himself of the dictum that "Life without industry is guilt, and industry without art is brutality; and for the words 'good' and 'wicked' used of men you may also substitute the words

'makers' or 'destroyers.' For it is clear that until we show a scrupulous respect for the fine things of the past, those that we may be hoping to see produced in the present or the future cannot be regarded as safe.

Review

A HISTORY OF ARCHITECTURE ON THE COMPARATIVE METHOD. FOR STUDENTS, CRAFTSMEN AND AMATEURS. By Sir Banister Fletcher. Seventh Edition. B. T. Batsford, Ltd., 1924. £2 2s. net.

The new edition of this work can be regarded as an authoritative compendium dealing with the history of building from the earliest times to the present day. In part it is a legacy of the Victorian manner of compilation which was initiated by Gwilt and continued by Fergusson. Unlike either of these books, it has the merit of dealing with facts and brings into its pages statements reflecting the researches of historians in every part of the world. Such a book needed skill and patience in its compilation; there was no space for idle speculation or wanton theory. It is apparent to the reviewer that the author has spared no pains, and it is significant that he has condensed his material into less than a thousand pages. While the majority of architects who are also historians have been content to select an especial phase or period for analytical study, Sir Banister Fletcher has given years to the making of a manual which deals with the history of architecture practically all over the world. A book of this character demands for its production close acquaintance with the vast number of old and new books, native and foreign, which deal at length with the story of building in every country. Most architects for their own satisfaction have through years of study formulated their views by means of independent research and have constructed empirically a mental picture of the evolution of building. It is, however, by means of such a book as the one under review that the clearest idea of the relation of the branches of the art in different countries can be gained. The author goes into the question of root causes; he analyses the various styles and gives at the end of each chapter a list of reference books. Both Gwilt and Fergusson worked at a time when precise information of the past was difficult of access. Gwilt's work was in the nature of an encyclopædia which could not be mastered even in a succession of readings. Fergusson's work, on the other hand, while providing entertainment was largely hypothetical.

The duty of a reviewer is to read and study the work of an author; in other words, to decant the information contained in the book for the benefit of the general reader. It is a task that to a large extent demands sympathy with the purpose the author has in mind. In the present edition the author has dealt systematic-

ally with the true literature of civilization, and through his labours lightens the studies of others. The numerous plates of illustrations, culled from all available sources, supplement the text in the most helpful way in spite of the fact of excessive reduction from the size of the originals. In vain have the pages been searched for gaps in the sequence of historical events. There is something of the precise working of dimensional masonry in the gradual building up of the work, a sure process which has been effected without the aid of cramps or mortar, the volume of material alone and its broad bearing ensuring stability. This is not a compilation that could have been undertaken from an easy chair. As the author states, he has travelled from Troy to modern Chicago. He has journeyed in Egypt, to Crete, Asia Minor, and the mainland of Greece. His travels have led him to Dalmatia and the whole of Italy, also to Tebessa and Carthage in North Africa. He has laid siege to Santa Sophia, and in Palestine knows the caravan routes from Jerusalem to Damascus. None of the secrets of European architecture is hidden from his sight. Few architects have had such opportunities and, as was to be expected, he makes his statements at first hand. The now historical styles of India, China, and Japan alone seem to have been outside his ken, but, nothing daunted, he has written about them and spared no effort to add representative illustrations of these essentially Far Eastern types.

Sir Banister Fletcher has confined his work to concise statements; he does not make heavy going in his writing; neither does he attempt more than to explain "that architecture is at once the reflection and the exponent of the period of which it is the product."

A. E. RICHARDSON [F.].

Correspondence

HOUSING.

27 November 1924.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I was quite pleased to see the letter of Mr. James Ransome, on "Housing," which appeared in the JOURNAL of November 22nd, 1924.

Practically it amounts to this: that the influence of Trades Union leaders has resulted in that organised idleness (in other words, "ca-canny" and tyranny) which has led, and continues to lead, to the enormous extra cost of building houses, which cannot be let at economic rents.

I have written and said over and over again during the last few years, that no improvement whatever can be expected in the building trade until the repeal of the Trade Disputes Act of 1906 is effected.

If architects will kindly read that Act, particularly paragraph 2 (1), headed "Peaceful picketing," they will then see that that apparently innocent para-

graph has enabled tyranny of the worst description to be exercised without any real interference on the part of those whose duties should have led them to stop the outrages.—Yours faithfully,

WM. WOODWARD [F.].

PLANNING FOR GOOD ACOUSTICS.

34, Bedford Square, W.C.1.
28 November 1924.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Owing to a mistake, for which I am myself responsible, in revising the proofs of "Planning for Good Acoustics," the three contributing factors to the good acoustics of the Greek theatre are given incorrectly in some of the copies of the last issue of the JOURNAL. They should read as follows:—

(1) The sound was intensified near the source by a number of useful reflections.

(2) The sound had a clear passage from speaker to listener and reached the listener at a wide angle.

(3) There were no long reflected paths of sound back from audience to stage.—Yours sincerely,

HOPE BACENAL [A.].

DECAY IN BUILDING STONE.

By W. A. FORSYTH [F.].

Professor Laurie's latest contribution to the JOURNAL on the subject of decay in building stone is extremely valuable to those who have the care of ancient buildings and the responsibility of erecting new ones. I am no chemist and therefore shall not attempt to supplement anything that he says. I write, however, to suggest that architects should in most cases use copper instead of lead for flashings and coverings to stonework, as I find, after long observation, that rain-water which has run over copper or other metals of which copper forms the basis never destroys limestone, but possesses some mysterious yet remarkable preservative quality.

As evidence of this, let me quote a few instances. Below the unpainted copper clock dial on a church tower the stonework is invariably in good preservation, although slightly discoloured. Where copper wire guards protect church windows the stone sills are usually in perfect order, and although previously worn away before the guards were fixed, the stone is preserved in excellent, although weathered, condition, by the tinted wash.

On stone slated houses, the mosses and lichens which cover the roofs are killed by the drippings from copper telephone wires and the slates preserved in such a way as to indicate the course of the wires across the village.

The parapet of a large Georgian house now being repaired has a Portland stone flat coping slightly weathered towards its own roofs. Set in the middle of this coping is a copper tape lightning conductor

carried around the whole house. The outer half of this coping has perished, but the inner portion, affected by the copper wash from the conductor, is in perfect preservation and shows every sign of remaining so.

The sill of a fourteenth century limestone bellcot was perishing until a modern bell was installed; the drip from the bell has arrested decay and appears to have set up permanent preservation.

At a well-known cathedral, some exposed Purbeck marble shafts are crumbling, but in places where the shafts are secured by brass clips the marble is immune from the attacks of weather and remains intact.

The splendid condition of the base of the Charles I statue in Trafalgar Square is perhaps attributable to the preservative qualities of the stained wash from the bronze equestrian figure.

As a more recent example, the Gladstone monument at the Law Courts has a Portland stone base. In places where the green discolouration is seen, it will be found that the sharp arrises of the mouldings are in perfect preservation, whereas those on the same exposure which have escaped the bronze wash are already slightly weathered.

At a recent meeting of the Chemical Society it was stated that the London County Council was investigating means to remove these green stains from the Portland stone monuments of London. My own view is that if the beneficial operation of these stains is interfered with, structural decay will be promoted.

One of the chief properties of this copper wash is its destructive effect upon mosses and other vegetation which develop so freely upon limestone and most other building materials under certain climatic conditions; but the preservative effect of the wash is even more remarkable. These growths must tend to retard evaporation and therefore prevent the passage of sulphate of lime to the surface of the stone, which Professor Laurie contends is essential to the decrystallisation of lime.

It is imperative that all limestones and calcareous sandstones should remain absorbent or porous after receiving liquid chemical surface treatment. I find that silicon ester fulfils this condition, although I have always been doubtful of silica as the basis of such preservative. I have lately used silicon ester in the treatment of surface erosion due to structural weakness in ordinary limestones and more especially ferruginous limestones with, I hope, success. I am also using sheet copper in modern stone buildings for covering cornices, stringcourses and other exposed parts, encouraging the wash to run upon the ordinary surfaces.

Can chemists throw any light upon the preserving operation of copper wash upon limestone and can a colourless solution be produced having properties of the kind above referred to?

BRICKS FOR HOUSES.

Sir E. Owen Williams, the Principal Engineer to the British Empire Exhibition, contributes to *The Times* for 22 November, an interesting article in which he advocates the restriction of brickwork solely to house building and of concrete to industrial building, in order to meet the present difficulty with regard to the construction of houses. He points out that the report of Mr. Wheatley's committee of employers and employees shows clearly the distribution of the efforts of the brick-laying industry as a whole. It shows, he says, that there are in England and Wales nearly 60,000 bricklayers, and that of these during the last twelve months not more than 15,000 have been engaged on house building, although it is commonly imagined that the greater number of bricklayers are so employed, from which springs the desire to find a substitute for bricks in house building. It is apparent from the figures that a substitute for bricks in industrial building would give much greater relief than can be expected from an alternative to bricks in housing. There are cogent reasons, according to Sir Owen, why it would be easier to supplant the 75 per cent. of bricks outside housing rather than the 25 per cent. employed in housing.

"A material and the uses to which it is applied," he proceeds, "grow together. Houses as we know them to-day have been developed side by side with bricks, and with them the domestic customs of the country. Bricks, houses, customs are a partnership. When one is changed all are disturbed, and this is the fundamental difficulty.

"To imagine what houses built of another material such as concrete would look like we must think of a world accustomed to concrete before bricks. The methods of manufacture and the peculiarities of the material would have stamped the house with forms peculiar to the material, and who can say what kind of house this would be? It seems certain that it would not in any way resemble a present-day brick house, but it would not be less beautiful, because it would be the true development of a material.

"Side by side with concrete houses would have grown up different domestic habits. Human beings have been accustomed to the present forms of domestic architecture, and the use of concrete for housing as it should be used involves something far greater than the mere transposition of the construction from one material to another. It may mean a far-reaching change in the social life of the country. . . .

"Concrete is a contemporary of the industrial era. That era has called for buildings little thought of 100 years ago. Factories and "skyscrapers" make demands in strength and height which must be satisfied economically. Steel ships are deeper drought ships; deeper ships demand deeper wharves and docks. Mechanical road transport by its increased weight and intensity demands stronger bridges and longer spans. Nature provided concrete for these new calls on the constructive industry. To use concrete for modern structures is to put it to its natural use. To use bricks for such structures more often is as great a distortion of the material as the use of concrete as a substitute for brick in houses."

"It is a common experience," Sir Owen states, "to hear that in America concrete is being largely used for houses. While that is true, the percentage of houses built of this material must be very small. It is used in America for viaducts, bridges, and industrial buildings, for which we in this land commonly and backwardly still use bricks. An example of this is the railway viaduct carrying the extension of the Golders Green tube. This case is not given because it is peculiar, but as typical of the present-day attitude towards concrete. In this viaduct there are enough bricks in every three yards of railway to build a house—i.e., a mile of railway has used up bricks sufficient for 600 houses. The railway is extended to open up new districts, but in its construction it swallows up the very means for such development. When such things as these are tolerated, it is anomalous to experiment with steel and concrete houses. It would obviously be better to build houses with the bricks, and the viaduct with steel or concrete.

"There are fundamental economic differences between concrete and brickwork. An 18 in. brick wall is practically twice as expensive as a 9 in. wall. An 18 in. concrete wall is only 50 per cent. dearer than a 9 in. concrete wall, this disproportion being due to the fact that the timber moulds are the same whatever the thickness of the concrete wall. This indicates that brick is useful for comparatively thin walls, concrete having its advantages in thicker and more massive constructions. Concrete walls are cheaper than brick walls when the thickness is more than 9 in., and dearer when the thickness is less. It follows that for houses where thicknesses of 9 in. and less predominate, bricks are at present the economical material, but for heavier constructions concrete has the field.

"To what extent can the use of concrete be economically increased in brick houses without affecting their appearance? If concrete were substituted for bricks in the work below the damp-course level of a brick house, approximately 12½ per cent. of the bricks would be saved, and the appearance would remain unchanged. This would mean an additional brick house for every eight houses built, or 5,000 more houses on last year's production.

"Plain concrete may not in the majority of cases give the same economy as reinforced concrete, but it is certain that if plain concrete were substituted for brickwork, dimension for dimension, it would, besides giving relief to the industry, be economical for walls and piers of dimensions greater than one foot. The significance of this is that expert knowledge of reinforced concrete for one reason or another not being available, designs may be in brick dimensions, and plain concrete may simply be substituted for bricks in the work. This eliminates the objection that restriction of bricks would, by revolutionary changes in design, hamper industrial building.

"The considerations I have advanced would point to a considerable relief to the bricklaying difficulty if:—

1. Concrete were used up to the damp-course level in all houses.
2. Brickwork were restricted solely to domestic architecture, or elsewhere in walls not exceeding 9 in. thick."

Architectural Copyright

The Practice Standing Committee recently put certain questions to counsel relative to an architect's copyright in his plans. The opinion of counsel has now been received and is printed below, together with the questions put, for the information of members.

QUESTIONS TO COUNSEL.

1. Whether it is possible for the guidance of the profession to lay down any general principle or principles as to the protection afforded to architects under the Act, and particularly as to the Copyright (if any) subsisting in plain designs for a Factory, Warehouse or other commercial building or in the designs for Housing Schemes as mentioned in the body of these instructions.

2. As to the legal construction and effect of Clause (h) of the R.I.B.A. Scale of Professional Charges.

3. As to the position of competitors for architectural competitions in the circumstances mentioned above.

4. As to the exact limitation of action imposed by section 10 of the Act and the remedy (if any) of the architect who finds that his plans have been reproduced and copied by the Local Authority without his knowledge after a lapse of more than three years.

5. As to the position of architects who have had unauthorised photographs or drawings of buildings designed by them reproduced without authority or acknowledgment.

COUNSEL'S OPINION.

1. Under the previous Copyright Acts there was unquestionably copyright in an architect's drawings and plans, and it is not to be presumed that the present Act has in any way restricted the scope of such copyright.

The present Act purports to extend copyright in two directions. The content of copyright is larger. It is no longer confined to the mere right of making "copies"; it is the right to produce or reproduce the work in any material form. The subject matter of copyright is extended by the inclusion *inter alia* of a work of architecture in the definition of "artistic work." The new definition of the content of copyright would alone have been sufficient to give the architect full protection inasmuch as the construction of a building from his plans would have been a reproduction of his work in material form. *Qua* copyright in the plans there is no express restriction which would limit that protection to their artistic character or design. The difficulty, however, arises from the introduction of an "architectural work of art" as a distinct subject matter of copyright and the restriction of the protection given to such work to its artistic character and design. If the meaning of that is that the architect's plans are now to be protected not as such but merely as containing in *gremio* an architectural work, then the Act would seem on the one hand to extend the architect's protection by giving him what he did not before possess, i.e., the exclusive right of constructing a building in accordance with his plans, but on the other hand to cut down his protection by restricting the exclusive right which he had under the previous Acts of copying the plans as such without regard to whether or not they possessed an artistic character or design.

If, however, the plans and the building may be regarded as separate subject matters of copyright this would preserve to the architect an absolute protection in his plans as such, and yet limit his protection in so far as construction of a building from them is concerned to the artistic character or design of the building. In my opinion the latter is the proper construction of these very difficult provisions of the Act. The Act does, I think, by necessary implication from the limitation on the protection given to "architectural work," cut down the copyright in the plan in so far as it contains in *gremio* the architectural work itself, while at the same time preserving the absolute protection in the plan as a drawing or plan of the architectural work.

In my opinion, therefore, the copyright in an architect's plans is absolute *qua* plans and any copying of the plans is an infringement without regard to their artistic character and design. It is no infringement, however, to use the architect's plans for the construction of a building unless the building produced from the plans has an artistic character or design. Plans prepared for the construction, say, of a factory upon purely scientific lines and without any regard to artistic proportions cannot in my opinion be copied without the consent of the architect.

On the other hand anyone lawfully in possession of such plans or of authorised copies of them may, unless bound by some express or implied contract with the architect, construct a building from them without the consent of or payment of remuneration to the architect. If, however, there is some original artistic character or design in the building which is contained in *gremio* of the plans, then the architect may obtain an injunction to restrain their use for such construction, or if the construction has been commenced, recover adequate remuneration as damages for infringement of his copyright.

What is to be deemed an artistic character or design is a question which would fall to be decided upon expert evidence given by architects or other artists. I should say that the cottages to be built from the plans which accompany these instructions do possess sufficient artistic character or design to entitle them to copyright as architectural words and the architect would, therefore, be accorded full protection.

2. The condition (h) in the Scale of Professional Charges does not in my opinion give the architect any copyright other than that conferred by the Act. *Prima facie*, however, there must, I think, be an implied term in the contract of employment that if the plans are used at any time for the construction of any building the architect shall be employed as such and paid upon the appropriate scale of remuneration. This term would be implied even although there was no artistic character or design in the work.

3. In the case of plans submitted under an architectural competition, I think there is clearly a contract that if the architect's design is selected either then or at any future time for the construction of the proposed building he shall be employed and paid in accordance with the R.I.B.A. Scale of Charges. The provisions of

sect. 10 of the Copyright Act do not affect the architect's rights under his contract.

It may of course be that an architect either in the case of a competition or otherwise may be precluded from relying on contract by reason of the provisions of sect. 174 of the Public Health Act, 1875, if the local authority is an urban authority and the contract is not under seal and involves a payment exceeding £50—see *Nixon v. Eritth Urban District Council*, 1924, W.N. 80. In such case the architect can only rely on his copyright. If the plans have been copied or if they are of an artistic character or design and have been used for the construction of a building or buildings there is infringement of the architect's copyright in respect of which he would be entitled to sue for damages.

4. Section 10 of the Copyright Act would apply to any proceedings in respect of infringement of copyright and would bar action being taken in respect of anything done more than three years before issue of the writ. That would not, however, bar a claim in respect of any building done within the three years although operations had been commenced before the three years, nor would it bar the architect's right to demand delivery up of the plans and to an injunction against their further unauthorised use. The date of discovery of the infringement is not material. The limitation runs from the commission of the infringing act even although the architect was ignorant of the facts.

5. The Copyright Act, Section 2 (1) (iii), expressly permits the making or publishing of drawings, photographs, etc., of any architectural work of art provided they are not in the nature of architectural drawings or plans. The architect has therefore no remedy in respect of such reproductions in catalogues or trade papers and cannot complain of the omission of his name. He would, however, have a good cause for action if his designs were falsely attributed to another architect.

Temple.

E. J. MACGILLIVRAY.

5 March 1924.

Allied Societies

THE LIVERPOOL ARCHITECTURAL SOCIETY.
PRESIDENTIAL ADDRESS OF MR. E. B. KIRBY, O.B.E.,
F.R.I.B.A., PRESIDENT OF THE LIVERPOOL ARCHITECTURAL
SOCIETY (INC.), 4TH NOVEMBER, 1924.

HISTORY OF THE REGISTRATION MOVEMENT

Since the day on which you elected me to this office a momentous event has occurred in the architectural profession which I am confident is a source of gratification to almost every member of this Society. I refer to the reunion of the Royal Institute of British Architects with the Society of Architects. In spite of the dismal jeremiads of its opponents, I have not the slightest doubt that the accomplishment of this step will be of great and immediate advantage to the profession as a whole and that its ultimate results will elevate the practice and prestige of architecture to a position which it has not previously occupied in the eyes of the public. I do not question that before the end is achieved our cause will be beset with many

obstructions and rebuffs. But in the long run its success has been assured for at least the next generation by the foresight, the persistence and even possibly the sacrifice of this.

I think it is important that we should be familiar with the history of this movement, and, even at the risk of being somewhat tedious, I propose to give you a brief account of the matter, especially as I believe it has never yet been fully recorded.

The idea of statutory registration for architects dates from the 'seventies, though at that time it received the support of but few leading architects. A comparatively small body of members of the Royal Institute advocated the idea, and most of their support was derived from the North of England. In the year 1884 matters were brought to an issue in the Institute. The advocates of the policy encountered so formidable an opposition that they decided that the only hope of progress in this direction lay in the foundation of an independent Society pledged to their programme. The result was the Society of Architects, which was formed in that year with the avowed object of attaining statutory registration. Henceforth their propaganda was conducted rather outside than inside the Royal Institute, and consequently the idea of registration came to be regarded as something alien, if not actually hostile, to that body.

It is interesting to note that the Society presented Registration Bills to Parliament in the 'eighties and 'nineties. They were, however, opposed by the Royal Institute and its Allied Societies and received no public support. Hence no progress was made.

So forlorn a hope, however, was not entirely without fruit. In the 'nineties and at the beginning of the present century the idea of registration was slowly permeating the rank and file of members of the Royal Institute, and more particularly the members of the Allied Societies, among whom it became increasingly popular. The subject was publicly discussed at Conduit Street and attracted such a degree of support that at last, in 1903-4, the Council appointed a representative committee to examine and report on the matter. This act of twenty years ago was the first step in the present phase of the movement. While, however, this committee was still sitting and taking evidence, the more ardent supporters of the measure sought to precipitate the issue by launching an election campaign, with the result that nearly all the old Council were turned out of office and a new Council elected on a registration mandate. Events have shown that this action was probably ill-advised, inasmuch as it introduced into the Royal Institute a political cleavage which might have ended in even more serious and disruptive effects than those which we have recently experienced. The new Council proceeded to appoint a new Registration Committee, which at once began to draft a Bill. However, before this Bill could be presented to Parliament another Council election took place. The old Council was once more elected almost *en bloc*, and most of the registration leaders were turned out. But, in fact, many of those elected to the Council were in favour of the policy of registration, though opposed to the methods which had been adopted to forward it by their immediate predecessors.

The new Council once more appointed a representative Committee to consider the whole position and to draft a policy. At the same time conferences were held with the opposition with the result that it was agreed to suspend party strife and adopt a "compromise policy" which would be acceptable to all parties. This was the compromise of 1906-7 and may briefly be summarized as follows:—

(1) To extend the membership of the Institute by the admission of all properly qualified architects and

(2) To present a Registration Bill to Parliament to empower the Institute to keep a statutory register of all qualified architects.

It was designed to attain the extension of the membership by admitting to Fellowship all applicants of suitable qualifications and by admitting to a new class of Licentiates all those not qualified for the Fellowship class.

It was hoped that the members of the Society of Architects and all those members of the Allied Societies, who did not already belong to the Institute, would be absorbed in this way, that the Society of Architects would cease to exist, and that the Registration Bill would go forward with the unanimous support of a united profession. The result was, however, only partially successful. Although 200 suitable architects were elected as Fellows and more than 2,200 as Licentiates, many of the Allied Societies' members remained outside. The Society of Architects, with a few exceptions, were dissatisfied with the terms and declined to avail themselves of the offer. Thus the scheme, though of great value in rendering the Institute more widely representative of the profession, failed in its immediate object.

In 1910 it was realised that a further move would have to be made in order to secure the necessary unity for the purpose of registration. Direct negotiations were opened with the Society of Architects, and in 1911 a scheme was agreed upon by the Councils of the two bodies very similar to that which has now been adopted. The senior members of the Society of Architects were to become Fellows of the Royal Institute and the remainder Licentiates; the Society was to be dissolved and a Registration Bill presented to Parliament. Owing, however, to faulty management and organisation, this scheme was rejected in 1912 by a vote of a general meeting of the Royal Institute.

The next two years were a period of marking time. A Committee was appointed to consider the deadlock which had been reached. There was a general feeling that all practicable means of attaining unification of the profession were exhausted and that consequently the prospects of a Registration Bill were hopeless. As a somewhat colourless alternative, a scheme was proposed for setting up a voluntary and non-statutory register to be kept by the Institute.

At this stage the war broke out and all controversial business was suspended until after the Armistice. It may not be out of place to remark in passing how disastrously the architectural profession was affected during the War by its lack of unified organisation. The Government could afford to ignore the claims of a body for which no single authority could speak. When one reflects on the unique disabilities, in comparison with other professions, which architects endured during that time, and from

which many of us have not even yet entirely recovered, the moral would not seem hard to draw.

The Council elected in the Spring of 1919 at once decided that the time had come to make a fresh effort to secure unification and registration. A fully representative Committee, including members of the Society of Architects and of every Allied Society, was established and eventually a scheme was elaborated and unanimously accepted by the Committee for admitting into the Royal Institute every qualified architect in the country and then proceeding with a Bill.

The scheme was submitted to every class of members and to every Society affected by it for detailed consideration. While it was in the course of thorough examination, and before any conclusion had been reached, an election campaign on the lines of 1904-5 was suddenly organised and, mainly owing to the ignorance or apathy of the general body of the electorate regarding the issues represented by the various candidates, almost the whole of the Council were turned out of office.

The new Council, who considered they possessed a mandate to oppose the unification of the profession, proceeded to draft a Registration Bill without consultation with the other bodies concerned. A General Meeting of the Royal Institute, which some members of this Society will have little difficulty in recalling to mind, declined to approve the draft and referred it back for such consultation as had previously been ignored. As such a consultation was directly opposed to the policy of the promoters of the draft Bill, the issue was left to be decided at the next Council election, which was contested on the unification and registration issues. The result of this election, in which the Allied Societies played so notable a part, was that the present Council was elected *en bloc*, by an unprecedented majority, with a definite mandate to try to settle the question finally. The scheme of 1911 was accordingly revised, and, after friendly negotiations with the Society of Architects in which the Royal Institute had the unanimous support of the Allied Societies, an improved scheme of amalgamation was agreed to. The action of the Council was approved at the next Council election by larger majorities than ever. It is significant that by this time the members of the Allied Societies had begun to realise both their power and their responsibility in influencing the destinies of their profession instead of leaving them at the mercy of alternating factions of London architects—some of them showed a disposition to regard the Royal Institute as a select metropolitan club. Had the provincial architects appreciated their influence earlier there is little doubt that the stage at which we have now arrived would have been ante-dated by at least a decade.

The scheme of amalgamation was passed almost unanimously this year at the largest General Meeting ever held by the profession; it was confirmed by an enormous majority in a referendum; it was accepted unanimously by the Society of Architects, and it is now awaiting the formal approval of the Privy Council.

The details of the scheme are well known to the profession and it is unnecessary to do more than recapitulate them briefly.

The Society of Architects will cease to exist. The Fellows are to become Fellows of the Royal Institute.

The members are to become Licentiates of the Institute, and the Licentiates are to become Students. The Associates of the Institute are raised to full equality with Fellows in voting. The Licentiates of the Institute are made corporate members and given voting powers and representation on the Council. The Council is enlarged by giving a much greater representation to the Allied Societies. The voting powers of members practising outside London are improved by the establishment of a referendum system. A Registration Bill is to be drafted at once and presented to Parliament until it becomes law. Members of the Royal Institute are to be entitled to call themselves "Chartered Architects."

This is the stage at which we have now arrived. The exact form which will be taken by the Registration Bill is not finally determined. The Registration Committee is empowered to prepare what it considers the most hopeful form of draft.

From what information I have been able to obtain it seems probable that the Bill will—

(1) Give statutory sanction to the Royal Institute scale of fees.

(2) Empower the Royal Institute to establish a statutory register of all qualified architects. This register is designed to embrace (in the first instance only) every architect who is at present making a living as a *bona fide* architect regardless of membership of any Society. All members of the Royal Institution and of the Allied Societies will be automatically placed on the register in virtue of their membership.

All outside architects, if they wish to be placed on the Register, will have to make formal application, supply evidence of their qualifications and be passed by a Board of Registration.

(3) Empower the Royal Institute, after a certain date, to refuse admission to the register of anyone who has not passed the necessary examinations.

(4) Registration will not now or in the future imply membership of the Royal Institute or of any other body. That will remain voluntary on both sides.

The whole of the foregoing must not be taken as anything beyond surmise, but it seems highly probable that the Bill as presented to Parliament will be mainly on these lines. On one thing the Allied Societies are resolved, viz., that their members, whether belonging to the Institute or not, shall secure preferential treatment in any scheme of registration, in comparison with outside architects, to the utmost degree which is compatible with the probable success of the Bill. Of course I need hardly say that the ultimate terms of such a Bill depend not upon the Registration Committee, but upon Parliament. Those who have any experience regarding the introduction of such measures will be neither surprised nor unduly disappointed if the Bill is thrown out at least once. In fact, one would not be exceptionally pessimistic in anticipating that it is unlikely to become law until the third or fourth attempt. The greatest difficulty of all is to persuade the Government to find time to discuss it.

There are certain items of general interest which have occurred during my term of office and which you may think it appropriate for me to mention.

On 6 May was held the Annual Dinner of the R.I.B.A.

at which the President of the L.A.S., as being the representative of the senior Allied Society, was called upon to follow the President of the R.I.B.A. in responding to the toast of the evening, viz., "The R.I.B.A. and its Allied Societies." The increasingly close relation between the R.I.B.A. and the Allied Societies was exemplified by the fact that this year, for, I believe, the first time in the history of the L.A.S., every member of its Council is also a member of the R.I.B.A.

Some time ago the Allied Societies were invited by the R.I.B.A. to reconsider and report on the existing distribution of their areas, but without any noticeable response, although it has lately been apparent at the Allied Societies' conferences that fairly general dissatisfaction exists on the subject. The anomalies which exist in our own area are particularly evident from its geographical character. Whereas its extent is considerable, reaching as it does from the Fylde to Aberystwith, the urban centres are very few and poorly distributed. The only towns of any real size are Liverpool (in which may be included the towns at the mouth of the Mersey), Chester, Warrington and Southport. It is hardly reasonable to expect isolated architects in outlying places to feel any tie to the L.A.S. or look for any advantage from its membership. On the other hand the Society cannot possibly exercise its influence on such architects as do not belong to it. We do not even know their names. In view of these facts and in order to bring our Society into some practical relation to its area, I can see no remedy except in a policy of decentralization consisting of the formation of local branches affiliated to the parent society. This has actually been inaugurated in the case of Chester, where the formation of such a branch society is practically completed.

The relations between this Society and the University School of Architecture are so close and interdependent that no explanation or apology is required in referring to them.

An invitation has been received from Professor Reilly to the effect that he would welcome the co-operation of local practising architects on the Jury for judging the series of weekly designs produced by the students. Our Council have approved the suggestion and propose to form a panel of architects for this purpose. I shall be grateful if anyone who is willing to serve would kindly give his name to the Honorary Secretary as soon as possible. The work would only involve an hour's attendance at the school at 11 o'clock on a Wednesday morning.

Now that our domestic differences are, as we all hope and trust, finally dissolved, we are left with the more natural and congenial task of devoting our energies to the great art of which we are the disciples so that its eminence and its usefulness to the best interests of the public may be more firmly established and more fully appreciated. We occupy to-day a position which is unique in architectural history. Never before has the profession enjoyed such a degree of union and strength or such unlimited possibilities for development. Whether or not we avail ourselves of these great opportunities depends mainly upon one thing, the acquisition of the corporate spirit. The ploughing of lonely furrows and the grinding of personal axes cannot contribute to the end we have in view. We must not only be content to regard ourselves as a brotherhood, but our mutual relations must be conducted in that spirit.

ARCHITECTS' BENEVOLENT SOCIETY.

SCHEME OF INSURANCE.

Architects who have not yet insured through the Architects' Benevolent Society will, it is hoped, do so at an early date, either by effecting new policies or, in the case of policies already placed, by transferring them to the agency of the Benevolent Society. The Society is in touch with most of the leading insurance companies and is in a position, with the help of an advisory committee of insurance experts, to offer advice on all insurance matters, the interest of the insured receiving special consideration in every instance. In Life Assurance the Society allows a rebate of half of the initial commission. The other half of the commission, as is the whole of the commission on policies other than Life, is retained by the Society and credited to the Fund in the published list of donors and subscribers as a contribution from the architect who has insured.

Since the Insurance Scheme first started, the sum of £100,000 has passed through the agency of the Society, which has received in commission close on £300. In addition, nearly £200 has been returned in rebate.

These figures, though encouraging, are not, it is considered, proportionate to the number of architects now practising in this country. The Architects' Benevolent Society urgently needs money; and while appreciating the extent to which architects in the ordinary way support it with subscriptions and donations, the Society does at the same time appeal to them for their support in the effort it is now making through its Insurance Scheme to help itself. A £1,000 Life Assurance brings in £10 (half of which is returned as rebate) the first year, and £1 15s. 2d. in subsequent years; a motor car policy for £500 brings in two guineas; and a £1,000 Fire policy effected through the agency of the Society brings in the small amount of 2s. 7d.; so that obviously before any real benefit is felt to the Fund, it will be necessary for a very large number of people to give their insurances.

Particulars of any kind of policy will be sent by return of post on application to the Secretary of the Benevolent Society, 9 Conduit Street, London, W. Postcards of enquiry are still coming in without signature, and any architect who has not yet received the information he asked for is requested to be good enough to forward his name and address.

THE A.A. PANTOMIME.

The title of the Architectural Association's pantomime this year is "Guffaws or the Double Elephant and Castle," which will be played in the large gallery of the R.I.B.A. on December the 17th, 18th, 19th and 20th at 8 p.m., with matinées on the 18th and 19th. It is hoped that there will be a good attendance at each performance, the pantomime no doubt providing the parodies of individuals and events which have proved so amusing in the performances of previous years. The prices of the tickets are 3/-, 5/9 and 8/6, including entertainment tax, and may be obtained from Miss Rigg, 34 Bedford Square, W.C.1. An additional reason for the success of the pantomime is that the profits will be handed over to the Architects' Benevolent Society.

TOWN PLANNING.

EXTRACTS FROM THE ANNUAL REPORT OF THE MINISTRY OF HEALTH FOR 1923-1924.

That the subject of Town Planning should have been promoted to a position in which that section of the Annual Report of the Ministry of Health is published as a separate White Paper, is evidence not only of the importance attached to it by the Ministry itself, but of the widened interest now taken by Local Authorities and others. The truth of this will be readily perceived even by a casual glance at the Extracts from the Report. There were no less than 360 schemes in various stages of preparation or in operation on 31 March last covering an area of nearly 1½ million acres. Though these figures are not unsatisfactory, the same cannot altogether be said of the progress made with schemes after the initial steps have been taken.

An apologetic note is at the outset of the Report sounded on behalf of Local Authorities on account of their preoccupation with the unemployment problem, but it is just possible that some strengthening of the central staff might assist in removing delays, for while fourteen "preliminary statements" received approval during the year under review twenty-nine were still with the Ministry under consideration. It may surprise some also to learn that not more than thirteen schemes (including one amending scheme) are at the present time in operation. These and other particulars of a statistical nature are given in a series of clearly compiled appendices to the Report which are worthy of study, especially by local Architectural Societies, who should be alive to the opportunities which a Town Planning Scheme offers to secure, amongst other things, the preservation of objects of architectural and antiquarian interest. The Act of 1909 contemplates architectural bodies and other interested persons being consulted and it would be interesting to know how many of the Local Authorities mentioned in the Report as having schemes on hand have been approached with this object.

Those who fear the hold-up of building development pending the preparation of a scheme will note with satisfaction the determination of the Ministry to do all it can to avoid delay or hardship by means of interim development orders and safeguards against capricious decisions of a Local Authority by appeal to the Ministry. There ought, indeed, in practice to be no difficulties. Some interesting examples of decisions given on appeal are referred to in the Report.

The information as to the progress of Regional Planning is distinctly hopeful, and it is perhaps in connection with Joint Town Planning Committees that architects as a body can best use their influence and experience, as has proved to be the case at Manchester, where ninety Local Authorities are co-operating in the main features of a joint scheme. The North of England is well to the fore in this desirable method of procedure and the Midlands are almost completely covered by regional committees, but Greater London and the home counties appear to be slow in taking action. All who have to deal with Town Planning Schemes realise how essential it is to consider every aspect of them from beyond the limits of local government boundaries, but it is to be hoped that regional committees will not prolong their enquiries to such an extent as to give excuse for undue delay in the preparation of individual schemes.

FRANK M. ELGOOD [F.].

Obituary

MR. JOHN SLATER.

It is with very deep regret that we have to announce the death, on the 1 December, of Mr. John Slater, ex Vice-President R.I.B.A., after a short illness. His funeral took place at Golder's Green crematorium on the 4th. Amongst the members of the Institute at the funeral ceremony were Sir John Burnet, A.R.A., Sir Henry Tanner, Mr. H. V. Ashley, Mr. E. P. Warren, Mr. Louis Ambler, Mr. W. A. Pite, Mr. Max Clarke, Mr. H. D. Searles-Wood, Mr. W. G. Hunt, Mr. Stanley Hamp, Mr. A. Moberley and Mr. Ian MacAlister (Secretary R.I.B.A.). An obituary notice by Mr. Paul Waterhouse will be published in the next issue of the *Journal*.

THE LATE THOMAS WINDER [*Licentiate*].

Mr. Thomas Winder died in a nursing home at Plymouth on 1 May 1924. He was 67 years of age, and for about four years had lived at Thurlstone Sands, South Devon.

He was the eldest son of the late Mr. Edmund Winder, and was educated at the Sheffield Grammar School. In 1871 he entered the Duke of Norfolk's Yorkshire and Derbyshire Estates Office and there spent the whole of his professional career of nearly fifty years. In 1881 he was appointed surveyor to the Yorkshire estates of the Earl of Effingham, and in 1898 he became agent for these estates. In 1899—after the death of his father, who spent fifty-two years in the Estates Office of the Duke of Norfolk—he succeeded to the position of surveyor to the Duke's estates in Yorkshire and Derbyshire.

Mr. Winder was an Associate Member of the Institution of Civil Engineers, a Member of the Society of Architects and a Licentiate of the Royal Institute of British Architects. For many years he was a member of the Council of the Sheffield Society of Architects, and, by regular attendance and helpful counsel, rendered valuable service in promoting the interests of the members.

He carried out much architectural work upon the estates with which he was connected; he also designed and executed extensive additions to the Shrewsbury Hospital. He took a great interest in the old buildings which came under his control, and embodied some of his impressions in a lecture he gave before the Sheffield Society of Architects on 11 February 1896, upon "Local Half-timber Buildings"; he also gave the following lectures before the Society—12 March 1908, "Feudal Tenures," and 13 January 1910, "Sheffield from Early to Commonwealth Times."

Mr. Winder published a handbook upon the Sheffield Manor House, and contributed articles to various publications upon antiquarian topics. He also wrote a book upon "Farm Buildings," a subject upon which he had great practical experience. Amongst his other publications were "An Old Ecclesfield Diary," and "T'Heft an' Blades o' Shevviold," a collection of dialect stories and antiquarian papers.

He was one of the founders of the Hunter Archaeological Society and served upon its Committee until he left Sheffield. He gave numerous lectures before its members and contributed articles to its "Transactions."

WALTER SHAW [*Licentiate*].

Mr. Shaw, of Northampton, died on 4 November in his 71st year. He commenced his long career in the offices of the late Edmund Law and was associated with him between twenty and thirty years. He afterwards entered into partnership with the late John Ingman, and for four or five years they were concerned as architects in a number of private residences and such public buildings as the Masonic Hall, Friendly Societies' Institute, etc. From the termination of this partnership Mr. Shaw practised alone, and in addition to domestic architecture, he was concerned in one or two large street improvement schemes, certain church restoration work, and latterly a considerable amount of surveying work on the development of new estates and as architect to new housing schemes. Mr. Shaw has left behind him a large number of sketch books devoted to ecclesiastical art.

Notes from the Minutes of the Council Meeting

NOVEMBER 17TH, 1924:

ARCHITECTURAL COPYRIGHT.

On the recommendation of the Practice Standing Committee it was decided to inform the Board of Trade, in reply to the Board's request for the observations of the R.I.B.A. as to the desirability or otherwise of introducing legislation for the purpose of setting up a Statutory Register of Copyright, that in the opinion of the Council it was desirable that legislation should be introduced for the purpose of setting up a Statutory Register of Copyright, provided that assurances are obtained that the rights granted under the Copyright Act of 1911 are not affected in any way.

RICHMOND BRIDGE.

Reports were received from the Art Standing Committee and the Town Planning Committee on the subject of the proposed widening of Richmond Bridge, and it was decided to take steps to call the attention of the authorities concerned to the undesirability of widening the bridge and the necessity of a broad consideration of the whole question of new bridges over the Thames outside the County of London.

BRITISH ARCHITECTS' CONFERENCE, 1925.

On the recommendation of the Allied Societies' Conference, the offer of the Northern Architectural Association to organise the Conference in their province in 1925 was cordially accepted.

HOUSING FEES TRIBUNAL.

The Tribunal presented its final Report on its work since its appointment in 1922, and in releasing the

Tribunal from its duties the Council passed a very cordial vote of thanks to the members of the Tribunal for their indefatigable and successful labours in the interests of the profession.

APPLICATIONS FOR MEMBERSHIP.

The applications of three candidates for the Fellowship and ten candidates for the Associateship were approved and ordered to be published in the Journal.

RESIGNATION.

The resignation of Mr. H. S. de Bertodano (Licentiate) was accepted with regret.

Notices

THE FOURTH GENERAL MEETING.

The Fourth General Meeting (Ordinary) of the Session 1924-25 will be held on Monday, 15 December, at 8 p.m., for the following purposes:—

To read the Minutes of the meeting held on 1 December 1924; formally to admit members attending for the first time since their election; to nominate candidates for membership (Election 5 January 1925).

To read the following Paper: "Shop Fronts and their Treatment," by Arthur J. Davis [F.].

ELECTION OF MEMBERS, 2 MARCH 1925.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that if they wish to take advantage of the election to take place on the 2 March 1925, they should send the necessary nomination forms to the Secretary not later than 23 December 1924.

SURVEYING INSTRUMENTS FOR HIRE.

A member has most generously placed at the disposal of the R.I.B.A. a very good dumpy level, tripod and staff, and also a good theodolite and tripod.

These instruments being a somewhat expensive part of the equipment of an architect's office, it is felt that many members may be glad of an opportunity to get them on loan. Members or Licentiates who desire the loan of these instruments should apply to the Secretary R.I.B.A. stating for how long they will be required. A nominal fee to cover the cost of adjustment from time to time will be charged.

R.I.B.A. JOURNAL AT REDUCED RATES.

Arrangements have been made for the supply of the R.I.B.A. JOURNAL (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12s. a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

WARNING TO MEMBERS.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A. and crossed.

Competitions

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor: Mr. William Dunn, F.R.I.B.A. Deposit £1 1s.

RECONSTRUCTION OF THE KONINGINNE BRIDGE, ROTTERDAM.

With reference to the announcement of this competition in a recent issue of the JOURNAL, His Majesty's Consul-General at Rotterdam has informed the Department of Overseas Trade that he has received from the Rotterdam municipal authorities a series of 72 questions and answers amplifying and explaining the technical points which arise in connection with the plans.

As a translation would involve considerable time and difficulty His Majesty's Consul-General suggests that any British firm desiring specific information on the subject should communicate with him direct.

BETHUNE MEMORIAL TO THE MISSING

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [F.] (appointed by the President); Mr. Walter Cave [F.], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 20 January 1925. Assessors: Mr. Paul Waterhouse, F.S.A. [F.], Professor C. H. Reilly, O.B.E. [F.], Mr. Percy S. Worthington, Litt.D., F.S.A. [F.].

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

ARCHITECTURE ENTRANCE SCHOLARSHIPS.

Fifteen Entrance Scholarships and Exhibitions are available for award to Students entering University College, London, in October, 1925. Two of these are tenable in the Bartlett School of Architecture. Three others are available in any faculty of the College or in the School of Architecture. Full particulars regarding all the Scholarships and Exhibitions may be obtained on application to the Secretary of the College.

Members' Column

SCHOOL OF ARCHITECTURE, UNIVERSITY OF CAMBRIDGE.

THE Board of Architectural Studies of the University are prepared to receive applications for the appointment of an Assistant to the Master of the School. Experience in architectural teaching and high professional attainment are required. The salary will be £350 per annum, exclusive of remuneration for duties performed during the Long Vacation Term, with liberty to practice, subject to the full requirements of the School.

Applications with copies of testimonials should be sent to the Secretary of the Board of Architectural Studies, Mr. Edward Bullough, Gonville and Caius College, Cambridge, before 1 January 1925. Duties will commence as soon as possible after the beginning of the Lent Term.

MESSRS. GRANT AND GOODCHILD.

MR. JOHN P. GRANT, F.R.I.B.A., of Quay Street, and the Bute Estate Office, Cardiff, has taken into partnership in his Quay Street practice Mr. W. Goodchild, A.R.I.B.A., and the firm will henceforth be known as "Grant and Goodchild."

COMMENCEMENT OF PRACTICE.

MR. HUGH P. BANKART [A.] has commenced practice at 1 Hare Court, Temple, E.C.4. Telephone: Cent. 3947.

COADJUTOR WANTED.

F.R.I.B.A., public school and university, with fairly good but spasmodic practice, wants to share his own or other offices with kindred spirit on principles of mutual aid.—Apply Box 9241, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENT WANTED.

LICENTATE with thorough knowledge of classic design, detail and draughtsmanship would render assistance on important competition or other work and take management of staff and work.—Apply Box 3115, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

OFFICE ACCOMMODATION.

F.R.I.B.A. offers share of his offices in good position in Westminster. For particulars apply Box No. 3124, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes III

At the Third General Meeting (Business) of the Session 1924-1925, held on Monday, 1 December 1924, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair.

The attendance book was signed by 7 Fellows (including 3 members of the Council) and 9 Associates.

The Minutes of the Meeting held on 17 November 1924, having been published in the JOURNAL, were taken as read, confirmed, and signed by the Chairman.

The Hon. Secretary announced the decease of the following members:—

Mr. Henry Perkin, elected Fellow 1891.

Mr. Robert Fabian Russell, elected Fellow 1887.

Mr. Arthur Herbert Belcher, elected Associate 1882.

Mr. T. Ellershaw, elected Licentiate 1911.

Also of Mr. John William Dennison, elected Associate 1864, Fellow 1871 and transferred to the list of Retired Fellows in 1899, and at the time of his decease, the oldest member on the Rolls of the R.I.B.A.

and it was RESOLVED that the regrets of the Royal Institute for the loss of these members be recorded in the minutes, and a message of sympathy and condolence be conveyed to their relatives.

The following candidates for membership were elected by show of hands:—

AS FELLOWS (20).

ARCHER-BETHAM: ARTHUR [A. 1920]

BIGGS: ALFRED ERNEST [A. 1902].

CATHCART: WILLIAM D'ARCY [A. 1909], Salisbury, S. Rhodesia.

CULLIFORD: LEONARD ARTHUR, F.S.I. [A. 1914].

DAWSON: NOEL JOHN [A. 1907], Alexandria, Egypt.

HAKE: GUY DONNE GORDON [A. 1911], Bristol.

HAYS: JOHN WILSON [A. 1918], Wingate, Co. Durham.

KNIGHT: EDWARD FROST [A. 1899], Parkstone, Dorset.

LETHBRIDGE: JAMES MORTON [A. 1903].

MACLENNAN: THOMAS FORBES [A. 1903], Edinburgh.

MURRELL: HAROLD FRANKLYN [A. 1906].

NOTT: GEORGE [A. 1907], Leicester.

OWEN: WILFRID SCOTTER, M.A., P.A.S.I. [A. 1912].

PIGOTT: RICHARD MOUNTFORD, M.C. [A. 1913].

RIPLEY: CEDRIC GURNEY [A. 1914], Shanghai.

SMITH: JAMES [A. 1906], Buenos Aires, Argentine.

THORNTON: HAROLD, B.A. [A. 1911], Dewsbury.

TOY: SIDNEY, F.S.A. [A. 1923].

WELCH: HERBERT ARTHUR [A. 1911].

WETENHALL: EDWARD BOX, F.S.I. [A. 1894].

AS ASSOCIATES (15).

BHEDWAR: CAVASJI KAIKHUSHRU [Special Examination], Bombay, India.

BLACKBURN: SHIRLEY LANPHER [Final Examination].

BLAKE: JOHN PATRICK, P.A.S.I. [Special Examination].

BRADEN: KEITH ARNOLD [Special War Examination].

BRIGHTIFF: CHARLES HENRY [Final Examination].

CAMPBELL: ARCHIBALD ALASTAIR VIVIAN [Special Examination].

CARELESS: SEFTON STOCKFORD [Special Examination].

COBB: ROBERT STANLEY, M.C. [Special Examination], Nairobi, Kenya Colony.

COOPER: CARILEF MILES, M.C., M.A. Oxon [Special War Examination].

DE BURGH: ROBERT STANLEY [Special War Examination], Farnham, Surrey.

EVE: CECIL GEORGE WILLIAM [Final Examination].

GEESON: ALFRED GODWIN [Special Examination], Leicester.

HODGES: ALFRED WALTER [Final Examination], Exeter.

REILY: ERIC [Special Examination], Belfast.

WILSON: JAMES MOLLISON [Special Examination], Dalkeith, Scotland.

AS HON. ASSOCIATES (6).

BRANGWYN: FRANK, R.A., R.P.E., Hon. R.S.A.

MACLAGAN: ERIC ROBERT DALRYMPLE, C.B.E., Director of the Victoria and Albert Museum.

SQUIRE: JOHN COLLINGS.

WALSTON: SIR CHARLES, Litt.D., L.H.D., Ph.D., Director of Fitzwilliam Museum and Slade Professor of Fine Arts, Cambridge.

WELLS: JOSEPH, M.A., Vice-Chancellor of University of Oxford.

YERBURY: FRANCIS ROWLAND.

AS HON. CORR. MEMBER (1).

OSTBERG: RAGNAR, Professor at the Royal Academy of Art, Sweden.

Mr. Francis Hooper [F.] moved, and Mr. H. D. Searles-Wood [F.] seconded, the following Resolution of which due notice had been given:

"To request the Council to consider and if thought desirable to approach the Master Builders' Association and the Building Trades Union and to offer any assistance deemed suitable in furthering the training of craft apprentices."

After several members had contributed to the discussion the Resolution was passed unanimously.

The meeting closed at 9.20 p.m.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

